DOCUMENT RESUME

ED 255 476 SP 025 778

AUTHOR Davis, Melvin, Ed.; And Others
TITLE Prospective Black Teachers and the Closing Door: Strategies for Entry.
INSTITUTION Alabama Center for Higher Education, Birmingham.
PUB DATE 84
NOTE 57p.
PUB TYPE Collected Works - General (020) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Academic Aptitude; Admission Criteria; *Black Teachers; Curriculum Development; *Educational Status Comparison; Elementary Secondary Education; Minimum Competency Testing; Reading Ability; *Teacher Education Programs; *Teacher Qualifications; Teacher Recruitment; *Test Wiseness
IDENTIFIERS Alabama

ABSTRACT

The following papers are presented in this publication: (1) "The Technology of Teacher-Competency Testing" (Cordell Wynn); (2) "The Black Public School Teacher: Alabama's Endangered Species" (Charlena Bray); (3) "Early Identification and Preparation for Successful Entry into Teacher Education Programs" (M. Carolyn Thomas and Kathleen P. Tyler); (5) "Tutoring Children in Kindergarten through Grade 3: A Model for Improving Teacher Education Majors' Basic Skills" (Maudie M. Williams); (6) "Self-Perceptions, Locus of Control, and Perceptions of High School Students Regarding Standardized Testing and Teaching as a Career" (James Clay, Olivia Sanders, Nell Anthony, and Earnest Dees); (7) "Test-Taking Skills of Rural Alabama High School Students" (Katie Blanding and Earnest Dees); (8) "A Comparative Analysis of Test-Taking Skills and Content-Based Instruction Upon SAT Test Scores" (Howard Davis); (9) "Improving Analytical Skills of Minority High School Students: Implications for Test-Taking" (Beatrice B. Morse); (10) "Effect of an Innovative Program Upon Tenth Graders' Reading Achievement" (Ralph J. Bryson and Nora D. Lawson); and (11) "Assessing Curriculum Development in Perry County, Alabama: The CIPP Model as a Suggested Evaluation Framework" (Paul Brantley and Melvin Davis). (JD)

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Prospective Black Teachers and the Closing Door: Strategies for Entry

Melvin Davis, Editor
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SP 025 778

Sponsored by the Alabama Center for Higher Education
School College Connection Program
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Foreword

The Alabama Center for Higher Education (ACHE) is a voluntary, academic consortium established in 1967 for the purpose of promoting interinstitutional cooperation among its members. Membership includes the seven four-year historically black colleges and universities in the state.

Alabama A&M University, Normal
Alabama State University, Montgomery
Miles College, Birmingham
Oakwood College, Huntsville
Stillman College, Tuscaloosa
Talladega College, Talladega
Tuskegee Institute, Tuskegee

One programmatic thrust of the consortium focuses on developing interinstitutional programs of field research, study and cooperation between the member institutions' Schools of Education and five targeted public school districts—i.e., the school systems in the counties of Bullock, Greene, Lowndes, Macon and Perry. The program, School-College Connection, is supported by a grant from the Lilly Endowment. Through technical assistance and research demonstration projects, college faculty and public school teachers are testing strategies to address issues and concerns surrounding teacher training, certification and employment.

These issues provide a mutual point of reference since the preparation of teachers falls along a continuum beginning with kindergarten and moving through college graduation. A number of checkpoints along the continuum require competency tests; competency tests which have been identified as threatening to the very "survival of black teachers in America."

This book represents research at the pilot stage, so represented, due in large measure to the modest size of grant awards. While much work remains to be done, these works collectively represent a step forward in tackling a tremendous problem.

Dedication

To Charlena Bray, the Lilly Endowment, and School-College faculty and administrators who made this publication possible, we salute your efforts to inspire hope.

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The Technology of Teacher-Competency Testing

Cordell Wynn *Stillman College*

The school reform movement, which began by setting standards for students, is increasingly expanding its focus to include teachers. Impetus for the movement began primarily in the Southern states during the 70's and had spread to a total of 36 states in early 1984. Even in recent months, teacher competency assessment programs have experienced rapid growth and continue to gain momentum throughout the nation. A search of the literature reveals that presently 21 states test or plan to test applicants for admission to teacher-education programs while 28 states test or plan to test prior to certification. Tests for certification usually include one or more of basic skills, professional skills, and academic skills.

In most states, the major concern focuses on teachers' competence in basic skills. Twenty-seven of the 36 states involved specify some sort of testing of basic skills—either for admissions, certification, or both. Testing in professional skills has been specified in 21 states and testing in academic proficiency has been specified in 20 states.

Wynn (1984) noted that the states are almost evenly divided in their use of standardized versus customized tests. Seventeen states had specified nationally standardized tests with the most frequently mentioned being the National Teachers Examination (NTE), the American College Test (ACT), the Scholastic Aptitude Test (SAT), and the California Achievement Test (CAT). Sixteen states have or are attempting to develop their own state tests. The movement is growing so rapidly that test development for the purpose of certifying teachers is becoming a commerical enterprise for consulting/testing services.

What Is Competency Testing?

Ebel (1978) makes the point that competency testing has been around for a long time. A very early competency examination was applied when the Gilead guards challenged the fugitives from Ephraim who tried to cross the Jordan River. The question was asked: "Are you a member of the tribe of Ephraim?" If the man replied that he was not, then they demanded, "Say Shibboleth." But if he could not pronounce the "H" and said Sibboleth instead of Shibboleth he was dragged away and killed. So 42,000 people of Ephraim died there at that time (Judges 12:5-6, *The Living Bible*).

It is worthy to note that there are no reported facts concerning the debates that may have gone on regarding what competencies, how to measure them, when to measure, how high the score should be, or, indeed, what should be done with the incompetent. We do not know the ratio of false positive to false negatives or the relative costs of the two types of errors. We do know that a competency test was given and that 42,000 people failed—with no chance of a retake.

Although significant improvements have been made in competency testing since the days of the Gilead guards' challenge, the concept remains just about the same. So in general, competency testing refers to the assessment of knowledge and/or performance judged necessary for a specific situation (Flippo & Foster, 1984). For example, a test for a driver's license and a bar examination for a prospective attorney to practice law are both competency tests—both measure the knowledge and skills judged necessary for adequate performance in specialized area. Similarly, a competency test for teachers refers to a test developed to measure the minimum knowledge and/or skills deemed necessary for adequate performance in the teaching-and-learning process. In most instances, these tests are paper-and-pencil, content-knowledge tests and are used for certification purposes by a state's department of education. In some cases, however, such as found in the states of Georgia, Oklahoma, and South Carolina, determination of minimal competence is based on measuring both knowledge and performance in the classroom. In these cases, in addition to a content-knowledge, paper-and-pencil test, an assessment instrument is used to measure on-the-job performance in the classroom.

Why the Pressing Concern?

The overriding concern in nearly all the states has been the lack of teacher quality. The general public is insisting on excellence in American education which has been underscored in over 100 regional and national reports. The responses to the increasing pressure to upgrade student learning outcomes have been far-reaching. State legislatures and state boards of education have been forced to move ahead in developing comprehensive plans to

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fix the complex problems with simplistic solutions. G. Pritchy Smith (1984) noted that little action has been directed toward curricular reform, increased teacher salaries, sufficient funding for education, the working conditions of teachers, or improved training models, great attention has been given to reforming the standards for selecting and "certifying teachers."

Much dissatisfaction from the public is expressed about the "poor quality" of teacher-education programs in schools and colleges of education across the nation. It is felt that colleges of education should take greater responsibility for seeing to it that their graduates are qualified for teaching posts. This need is underscored by another report issued in September 1984, "The Making of a Teacher," by C. Emily Feistritzer of the National Center for Education Information, a private organization in Washington, D.C. Miss Feistritzer points out that "far too many teacher-education programs today accept anybody and everybody who harbors the slightest aspiration to teach." Further, she makes the point that "Teaching will never be a true profession until it adopts 'rites of passage' selection procedures at the entry level, as well as standards of excellence and competence on the job."

The underlying concern for teacher competency testing suggests that (1) the quality of our children's education is deteriorating and that (2) teacher competency testing will significantly improve the educational quality (or reverse the deteriorating process if #1 is true).

What Is the Impact of the Competency Testing on Minorities?

There is growing concern over the impact of the tests as black students are failing the examinations in disproportionately larger numbers than whites. Mohr (1980) and Wright (1980) have noted the detrimental effects of competency testing on the professional pool of black teachers by describing teaching as "the profession blacks may lose." Wynn (1984) noted that "the recent emphasis on teacher certification and standardized tests for determining competency may result in a significant reduction of black representation in the teaching profession." The writer feels that, should this take place, it will be a retrogression in the plight of blacks and a sad outcome to the present intensified discussion of education in our country.

The writer wishes to make it clear that he sees nothing inherently wrong with standards or tests which are designed to improve the quality of education. We all want better teachers and better-educated students, but there are serious limitations to the present system that relies so heavily on examination performance. An actual test score seemingly has become more valuable and marketable than the education it represents.

An example of the problem can be seen in Florida, one of the movement's pioneering states, which began testing candidates for teaching positions in 1980. From 80% to 85% of all those tested each year have passed, but the passing rate for blacks alone has been from 35% to 40%, according to the Florida Department of Education. The writer has great concern about these numbers and the implications they hold for school districts that are trying to employ more minorities as well as providing the needed impetus that our pluralistic society requires.

What appears to be happening in some places is that black graduates in education are avoiding the test by switching career plans and looking for nonteaching jobs even though they majored in education. The writer feels that this trend raises the possibility that eventually black students will not bother to major in teacher education at all which will certainly shake the concepts of multicultural education which are very deeply imbedded in the standards of accrediting agencies. The naked fact is that students will not continue to enroll in college programs where it is unlikely they will pass the certification examination.

Providing the most recent comprehensive analysis of historical and contemporary factors responsible for the diminishing numbers of black teachers, Witty (1982) identifies state-mandated competency testing as a threat to the very "survival of black teachers in America." In an analysis of unresolved issues posed by the newly adopted Texas teacher-assessment program, Vargas (1983) forecasts a similar threat to future Hispanic teachers.

Concluding Observations

The writer joins forces with those who systematically strive to improve the quality of education in our schools and agrees that we want and need better teachers. Teacher competency testing, in the writer's judgment, however, is not the route to take to raise the quality of elementary- and secondary-schooling for the following reasons: (1) It has been empirically proven that tests do not predict teacher competence; (2) The applicants for teacher education will not magically be transformed into the "best and the brightest" because the state administers a test; (3) There will be so few who are actually screened out by these tests that, even if they could predict success, there would be no appreciable effect on the quality of those certified.

Educational reform is needed in several areas simultaneously, and to confine efforts to only one area is to do a disservice to our schools. We must not

be lulled by the current call for teacher-testing into thinking that our efforts to reform the curriculum, the learning environment, and teaching practices are not necessary. On the contrary, the most immediate need is in these areas and not in the testing of teachers.

The teacher-coinpetency-testing movement, in the opinion of the writer, will induce negative reverberations that will reach far beyond the exclusion of minority applicants from teaching. First, the presence of minority teachers contributes to the quality of education for all children in a pluralistic society. Second, the option for higher education for minority youth who aspire to be teachers will become more and more restricted by 1992.

As G. Pritchy Smith (1984) noted, initially considered a reasonable and acceptable solution for improving the quality of education, competency testing is now in danger of causing irreparable damage to the democratic character of public education. He continues by saying: "competency testing forces equity and excellence to be dichotomies and demands an elitist shift from equity to excellence in the nation's thinking. A democratic society cannot have excellence in education without equity."

If this nation is considered at risk now as a result of its poor quality schooling, it is believed that a decade or more of willful elimination of minority teachers will result in a nation lost of direction and substance in fulfilling its rich cultural heritage in a pluralistic setting.

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The Black Public School Teacher: Alabama's Endangered Species

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All too often, national and regional statistics and projections are provided on a certain topic or issue from which there is a tendency to isolate ourselves locally. The notion is that since people and circumstances are so different in other areas—the west, north, midwest, northeast—applicable projections there are unrealistic here.

The national debate regarding the future of the black public school teacher focuses on a set of circumstances not unlike those in Alabama. Among a number of distinct, yet related, factors which threaten the survival of black teachers in America are those described by Witty (1982) which include expanded employment opportunities for blacks, declining school enrollments, declining quality of education for blacks in elementary and high school, and accompanying testing and screening practices for teacher education programs and certification.

Interspersed throughout the gloomy and dire predictions are reports which, on one hand, plead the case for, and on the other, literally demand the survival of the black public school teacher. A Task Force of the Southern Regional Education Board (1981) indicated that an adequate supply of highly qualified black teachers are needed. The absence of a representative number of minority teachers and administrators in a pluralistic society is damaging because it distorts social reality for children (Hilliard, 1980). Hodgkinson (1983) pointed out that any surge of new enrollments during the next two decades in higher education will be led by minorities, particularly blacks and Hispanics. Minority teachers will be needed to assist in the effective education of this large population of minority youth. The survival of black public school teachers just has to be a part of the very reason for being of departments and schools of education in our black colleges and universities (Wright, 1980).

That the public school teacher has played a major role in public education in Alabama goes without question; that the black public school teacher has been successful goes without question; that an overwhelming majority of the black public school teachers were successfully trained by the state's historically black colleges likewise goes without question. Yet, a series of questions are being raised in Alabama; questions which are addressed in ways which are proving deleterious to the survival of the black public school teacher.

Following the national trend, the number and percentage of black public school teachers are steadily decreasing. The decrease occurs at a time when the percentage of black pupils in the schools is increasing. From 1980 to 1982, there was a five-percent reduction in the number of black teaching positions in the state as compared to a two-percent reduction in the number of white teaching positions. In 1982, 27.5% of the teachers in the state were black while 34.2% of the state's pupils were black.

Table 1
Number of Teaching Positions in Alabama

Year	Total	White[a]	Non-white[a]
1981-82	30,914.3	22,403.6 (72.5%)	8,510.7 (27.5%)
1980-81	31,547.1	22,805.7 (72.3%)	8,741.4 (27.7%)
1979-80	31,843.7	22,931.7 (72.0%)	8,912.0 (27.9%)
1974-75	35,725.2	25,439.5 (71.2%)	10,285.7 (28.8%)

Source: Annual Reports of the Alabama Department of Education
Note: Data are reported as non-white for black and other
[a]Percentages of the total number are in parenthesis

Table 2
Public School Enrollment - All Grades - in Alabama

Year	Total	White[a]	Non-white[a]
1981-82	757,061	498,488 (65.8%)	258,573 (34.2%)
1980-81	771,464	510,729 (66.2%)	260,735 (33.8%)
1979-80	780,546	518,010 (66.4%)	262,536 (33.6%)
1974-75	787,773	524,000 (66.5%)	263,773 (33.5%)

Source: Annual Reports of the Alabama Department of Education
Note: Data are reported as non-white for black and other
[a]Percentages of the total numbers are in parenthesis

Looking at these data from the perspective of access of students to teachers of the same race, an analysis of pupil teacher ratios (Table 3) reveals steadily decreasing access of black students to black teachers while access of white students to white teachers is steadily increasing. In 1982, the ratio of black students to black teachers was 30 to 1 while the ratio of white students to white teachers was 22 to 1.

Table 3
Pupil Teacher Ratios by Race

Year	White Pupil Teacher Ratio	Non-white Pupil Teacher Ratio
1981-82	22 to 1	30 to 1
1980-81	22 to 1	30 to 1
1979-80	23 to 1	29 to 1
1974-75	21 to 1	26 to 1

Source: Developed from data taken from Annual Reports of the Alabama Department of Education.

These data reflect a disturbing trend that demands forceful and effective actions. The primary question, of course, is why the decrease in black teachers at a time when the numbers of black students are increasing with more significant increases projected for the future?

Traditionally, the historically black colleges and universities (hbcu)—Alabama A&M University, Alabama State University, Miles College, Oakwood College, Stillman College, Talladega College, and Tuskegee Institute—trained an overwhelming majority of the state's black public school teachers. Enrollment in teacher training programs at each of these seven institutions has sharply declined over the past five years. Sharp enrollment declines have obviously resulted in sharp declines in the number of degrees conferred. Has the decrease in numbers of prospective black public school teachers trained by the hbcu's been reflected by a concomitant increase in numbers of prospective black public school teachers trained by the predominately white colleges and universities? Unfortunately, no.

Why the sharp decline in enrollments at the hbcu's? A survey of Deans of Education from the state's hbcu's provided a number of reasons for the enrollment decline, reasons which parallel those reported in the literature nationally.

Expanded Employment Opportunities for Blacks

Integration in the workplace and in the higher education community opened many doors to blacks over the past 20 years that were heretofore closed. While predominately white colleges and universities in the state enroll a majority of black students, an examination of fields of study for these students will likely reveal a distinct minority enrolled in teacher training programs.

Clearly, an increased number of and better job opportunities have contributed significantly to the decline of blacks entering teaching. Anthony (A&M) refers to the "increased number of options," while Bonner (Miles) speaks of "other more lucrative fields"; Perry (Alabama State) refers to the "onset of high technology and integration in the workplace" while Johnson (Stillman) speaks of the "general shift in career choices." Given these expanded opportunities, incentives must be provided to attract increasing numbers of prospective black teachers.

Decline in the Quality of Education in Public Schools

Toffler (1980), in describing the "interweave problem" in *The Third Wave*, indicated that all of our problems are interrelated; i.e., a problem in one area affects many other areas. So it is with enrollments in teacher training programs. Witty (1982) noted that the number of black students who enter college and are potential teacher education students is related to the quality of education in kindergarten, elementary, junior high, and high schools. The point is most aptly made by Ernest L. Boyer, President of the Carnegie Foundation for the Advancement of Teaching: "Of special concern is the fact that black and Hispanic young people are precisely those with whom our schools have been least successful."

Alabama's response to the proliferation of reports in the 80's which documented the decline in the quality of education in our public schools was *A Plan for Excellence: Alabama's Public Schools*. Presented by the State Superintendent of Education in early 1984, the report pointed out that while we are expecting more and more from the school in our society, we are seemingly expecting less and less in individual performance and good old hard work from the student. Whether or not the ensuing commitment to excellence addresses the special needs of black students or simply places the blame on the victims for the problems, remains to be seen.

Reforms underway in the public schools include the Basic Competency Testing Program in grades 3, 6, and 9, expansion of the state's student achievement testing program, and the Alabama High School Graduation Examination. The data reveal a disproportionate number of black students who do not meet the minimum standards. Given the mandated ACT score required to enter teacher education, the

State Department of Education along with the state's colleges and universities must ensure that the quality of education be enhanced in these public schools since it is these students at the beginning of the pipeline who constitute the pool of prospective teacher education candidates.

Admissions Practices for Teacher Education Programs

First and foremost among the reasons given for the more recent enrollment decline of prospective black teachers were admission practices established by the Alabama Department of Education for the institutions' teacher education programs. Included among the criteria for selection of teacher education candidates are a minimum score of 16 on the American College Test (ACT) or 745 on the Scholastic Aptitude Test (SAT), and passing the English Language Proficiency Examination. Usage of the ACT and SAT tests, on which a disproportionately high percentage of blacks score well below the minimum cutoff, effectively screens out a large percentage of black candidates. According to Witty (1983), the increased inappropriate use of standardized tests such as the SAT and the ACT disproportionately screens out minority candidates who may be highly competent.

The cyclic dilemma posed by the decline in the quality of education in the public schools is more evident and indicative of the state "putting the cart before the horse" in setting college level standards which large numbers of its public school graduates cannot meet prior to instituting a statewide program of reform for the public schools. Such a move represents an attempt to possibly restrict access to teacher education.

Are we headed the way of Florida which established a minimum SAT score of 835 and/or ACT score of 17? This has resulted in an overall reduction of 25% in the number of students entering teacher education programs and a reduction of approximately 90% in the number of minority candidates (Feistritzer, 1983).

Certification Requirements

Alabama is part of an increasing movement to develop and use tests as a part of the teacher certification process. Beginning June 1981, the Alabama Initial Teacher Certification Tests were administered to graduates seeking teaching certificates in the state. Teacher education candidates are required to pass examinations in two areas—basic professional studies and the field of specialization.

Score reports by test and by college/university have been made available to the public on the first seven test administrations. A number of inappropriate generalizations and inferences have been made in many instances where the number of test cases was negligible. For example, if one individual from an institution takes and passes the test, the institution has a 100% passing rate. Simultaneously, if one individual from an institution takes and fails the test, the institution has a 0% passing rate.

Notwithstanding the weaknesses of the data, some interpretation is attempted. A review of the data from the seventh test administration (March 26, 1983), which involved the second largest group of candidates, revealed a 70% or more test passage rate 18.5% of the time for whites. Of the 45 tests in the battery, less than 15% were administered to more than ten candidates. Provided in Table 4 are those six tests taken by more than ten candidates. A closer look at Table 4 also reveals that black candidates pass the test at much the same rates irrespective of type institution attended.

The Alabama Initial Teacher Certification Testing Program raises a number of questions and concerns. Is the disproportionate screening out of prospective black teachers in violation of the Equal Protection Clause under the Fourteenth Amendment? Does the test discriminate against a class of people? The test has not been demonstrated to be job related. No validity or reliability data are available on the test. Do persons who pass the test—i.e., score 70 or above—make better teachers than those who fail or score below 70%? Clearly certification requirements which do not disproportionately screen out black teacher candidates and which are demonstrated to be job related are needed to replace the present system of requirements.

Summary

Without forceful and effective actions, the future of the black public school teacher is bleak. Stronger and more effective voices are needed to address the deleterious forces that simultaneously threaten and demand the survival of the black public school teacher.

A commitment to excellence in our public schools must be a commitment to equity. The decrease in number and percentage of black teachers in the states' public schools must be halted so that students can have equal access to same race teachers. The decrease must be halted so that our schools may always represent the diversity of our multicultural society.

The full resources of the black community must be mobilized so as to ensure that our young people perceive teaching as the viable profession that it is. The interrelationships between expanded

Table 4
Summary Score Report on Selected Tests of the Alabama Initial Teacher Certification Teaching Program

	Black			From Black Colleges		
Test	Number Tested	Number Passed	Percentage Passed	Number Tested	Number Passed	Percentage Passed
All Tests	265	114	43	151	70	46
Bas. Prof. Stds	55	24	44	23	8	35
Early Childhood Education	35	13	37	14	3	21
Elementary Education	46	17	37	22	12	55
Emotionally Conf.	11	6	55	7	4	57
Learning Disabled	14	9	64	12	7	58
Mentally Retarded	36	10	28	23	8	35

Source: Alabama State Department of Education, Office of Regulatory Services Statewide Summary Report of the Alabama Initial Teacher Certification Testing Program, March 26, 1983.

employment opportunities and adequate representation in the state's public schools must be recognized and interpreted to both our prospective black teachers and to our community's decision-makers.

The pipeline through which prospective black teacher education candidates come must be enhanced beginning with kindergarten programs. Standardized test results must no longer be used to disproportionately screen out black students. Standardized test results must only be used to screen in black students. Improved quality of the public school teacher is a direct result of the improved quality of education in the state's public schools.

The usage of standardized tests to admit candidates to teacher education programs and to certify teachers for the state's classrooms is inappropriate and legally questionable when a disproportionate number of same race prospects are denied admission and certification. Thus, a call is made to educators, educational policy makers, and the general public to take forceful and effective actions to halt the disturbing trends that threaten the survival of the state's black public school teachers.

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Early Identification and Preparation for Successful Entry into Teacher Education Programs

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The number of students entering and successfully completing teacher education programs in historically black colleges has declined since the Alabama Board of Education adopted the resolutions to require a 16 on the American College Test (ACT) for entry and a 70% on a state examination for certification at the conclusion of the program. In addition, colleges of education are in danger of losing accreditation because at least 70% passing rate must be maintained. Research and programs are needed to help minority students successfully enter and complete teacher preparation programs and prevent further loss of minority teachers trained in historically black colleges.

Thomas (1983) reported that the primary causes of low ACT scores were underpreparedness in subject matter included in the ACT and low reading levels. The underpreparedness was caused by not taking college preparatory courses in high school. Random samples of students in the 1980-81 and 1981-82 freshmen orientation classes at Alabama State University were surveyed and approximately 89% of the freshmen had not taken the college preparatory program in high school (Thomas, 1982). In addition, test scores and data were compiled for students who requested help in 1982-83 to increase their ACT scores to 16 (Thomas, 1983). More than 90% of the students had not taken the high school courses tested by the ACT, and more than one-half (53.8%) of the students did not read at the high school level on the comprehension portion of the Nelson-Denny Reading Test.

The ACT samples content generally included college preparatory courses. For example, 85% of the ACT Mathematics Usage Test includes content from Algebra I, Algebra II, and Geometry (*Content of the Tests in the ACT Assessment*, 1977). Students who take only two science courses are exposed to approximately 50% of the content on the ACT Natural Sciences Reading Test. Similarly, students who do not take American History, World History, Government, and Economics do not get exposure to the content in the ACT Social Studies Reading Test. Consequently, high school students must complete a college preparatory curriculum in order to be exposed to sufficient content on the ACT to obtain a high or average score. Clayton (1979) found that only 35% of college freshmen in the majority of historically black colleges had taken the college preparatory courses necessary to be able to successfully answer ACT questions.

Since the major contributing factors to low ACT scores are failure to take certain college preparatory courses and low reading skills, the need for early identification and preparation for prospective teachers is evident. Consequently, a model program was implemented with Perry and Greene County, Alabama high school students and with Alabama State University freshmen from 15 Black Belt Alabama counties.

Method

Sample Identification

The model program for early identification and preparation of prospective teachers included two groups of students who expressed possible or definite interest in teacher education, (a) high school sophomore, junior, and senior students from three high schools in Perry and Greene Counties in Alabama, and (b) Alabama State University freshmen from 10 of the 15 Alabama Black Belt counties. The freshmen were from Barbour, Clarke, Dallas, Greene, Hale, Lowndes, Macon, Perry, Sumpter, and Wilcox Counties.

The high school sample was identified by giving sophomore, junior and senior high school students the *After High School Plans* questionnaire, which elicited information about high school courses taken or planned, intended college attendance and majors and classification. The college freshmen were identified by visiting freshmen orientation classes and getting data from those students who expressed interest in teaching.

Procedure

High School Group. Sophomore, junior, and senior students in three Perry and Greene County high schools who intended to take the ACT were given the following treatment:

1. Careful diagnosis of deficiencies was accomplished by administering the Nelson-Denny

Reading Test and the Mathematics Computation California Achievement Test-16C. Previous ACT scores, high school records or courses planned or taken, and responses to the *After High School Plans* questionnaires were also used to identify deficiencies.

2. Test-taking training was conducted using *Hints for Improving Test Scores* (Thomas, 1979) and the 1983 ACT Sample Test. The test-taking skills were taught, practice tests were administered and the ACT Sample Test was administered under supervision.

3. Recommendations for individualized plans of action were listed and copies were given to the students, the parents, and the school counselors.

4. Recommendations for curriculum and program improvement were made to the principals and counselors of each school. These recommendations included the addition of courses and enrichment programs and changes in course content. Each recommendation was based on the data collected on each student in the school and was intended to increase exposure of the students to content included in the ACT.

College Freshmen Group. The freshmen who expressed an interest in teacher education were given the following treatment:

1. Careful diagnosis of deficiencies was obtained by using the scores on the Nelson-Denny Reading Test, previous ACT scores, and advisement records.

2. Recommendations for individualized plans of action were listed and copies were given to each student and the advisor.

3. Referrals to the appropriate courses and laboratories were made so that students with reading level scores below the 11.0 grade level were placed in reading courses, students with low mathematics-usage scores were placed in appropriate courses or scheduled for the mathematics laboratory, and students who did not take college preparatory courses in high school were placed in similar courses in college.

4. Test-taking training groups were planned for those students who had completed the individualized plan of action. Test-taking skills (Thomas, 1979), practice tests similar to the ACT, and tutoring were included in the weekly two-hour sessions.

Addition of Comparison Groups in the Study

The original samples for this study were high school students and Alabama State University freshmen from 10 Black Belt counties who were interested in becoming teachers. However, comparisons of data for prospective teachers, other college bound high school students and freshmen from other geographic areas produced some interesting findings after post hoc examination of the data. Consequently, data regarding high school curricula, reading levels, mathematics computation skills and sample ACT scores were compiled for high school students interested in teacher education and also for those students interested in other college majors. In addition, data describing reading levels and ACT scores for prospective teachers in their first year of college were compiled whether they were from Alabama Black Belt counties or other geographic areas. The comparisons yielded valuable information about the severity of the needs of the students in the original sample.

Results

Students Taking Specific College Preparatory Courses

After High School Plans questionnaires were collected from sophomores, juniors and seniors in the three Perry and Greene County high schools, 173 students who wanted help to prepare for the ACT were identified. Data from students who expressed possible or definite interest in teaching (n=129) were compiled separately from data for students not interested in teaching (n=44).

Numbers and percentages of students taking or planning to take specific mathematics courses are contained in Table 1. More than three-fourths of all the students took or planned to take the General or Consumer Mathematics and Algebra I courses. Only 31.2% of the High School B students interested in teaching included Algebra II in their curricula. Fewer students interested in teaching from all three high schools than those not interested in teaching included Geometry in their curricula. Also, with the exception of the nonteaching sample from High School C, fewer than one-half the students took or planned to take Geometry. Only 12.5% of High School B students included Geometry in their curricula.

Numbers and percentages of students who took or planned to take specific science courses are contained in Table 2. More students included Biology than any other science course. Fewer High School B and C students interested in teaching than those not interested in teaching included Chemistry and Physics. Less than one-half (49.1%) of all the students wanting to attend college included Chemistry in their curricula, and approximately one-fourth (25.4%) of all the students planned to include Physics. This means that only about one-half of the college bound students intended to take three years of science and only one-fourth planned to take four years of science. High School B data show that only 18.8% of the teaching sample planned to take any science beyond Biology.

Data showing planned inclusion of specific social studies courses are contained in Table 3. Fewer students in High School B interested in teaching

Table 1
Numbers and Percentages of Prospective Teachers and Other College-Bound Students with Specific Mathematics Courses in Their Curricula

Group	n	General or Consumer Mathematics N	%	Algebra I N	%	Algebra II N	%	Geometry N	%	Trigonometry N	%	Calculus N	%
High School A													
Teaching	63	49	77.8	56	88.9	42	66.7	24	38.1	26	41.3	5	7.9
Nonteaching	19	8	42.1	15	78.9	11	57.9	8	42.1	9	47.4		
High School B													
Teaching	16	12	75.0	16	100.0	5	31.2	2	12.5				
Nonteaching	18	14	77.8	18	100.0	15	83.3	8	44.4	5	27.8	2	11.1
High School C													
Teaching	50	40	80.0	43	86.0	32	64.0	17	34.0	13	26.0	4	8.0
Nonteaching	7	7	100.0	7	100.0	6	85.7	4	57.1	1	14.3	2	28.6

Table 2
Numbers and Percentages of Prospective Teachers and Other College Bound Students with Specific Science Courses in their Curricula

Group	n	General or Physical Science N	%	Biology N	%	Chemistry N	%	Physics N	%
High School A									
Teaching	63	52	82.5	60	95.2	37	58.7	16	25.4
Nonteaching	19	14	73.7	17	89.5	9	47.4	3	15.8
High School B									
Teaching	16	11	68.8	14	87.5			3	18.8
Nonteaching	18	10	55.6	17	94.4	4	22.2	5	27.8
High School C									
Teaching	50	43	86.0	45	90.0	30	60.0	12	24.0
Nonteaching	7	6	85.7	7	100.0	5	71.4	5	71.4

included Economics, Geography, American Government, and American History than college bound students not interested in teaching. World History was chosen proportionately less often by High School C students interested in teaching than those not interested in teaching. Less than one-half (40.5%) of all the students planned to take World History.

Scores on Reading Test

The numbers and percentages of students from the three high schools reading in specific grade level ranges were combined in Table 4. More than one-half of the students interested in teacher education read below the 9.0 grade level. Only 16% of the students interested in teaching read at or above the 11.0 grade level recommended to achieve a 16 on the ACT. Nearly one-half (46%) of the high school students not interested in teaching also read below the 9.0 grade level. Only 11% of the nonteaching sample achieved reading scores at or above the 11.0 grade level.

The numbers and percentages of college freshmen prospective teachers from Black Belt counties and other geographic areas reading within specific grade level ranges were computed and are contained in Table 5. Proportionately more college freshmen than high school students read below the 9.0 grade level. More than 61% of the college freshmen read below the 9.0 grade level, whereas 53.6% of the high school teaching sample and 46.0% of the high school nonteaching sample scored below the 9.0 grade level. Less than 10% of the Black Belt

Table 3

Numbers and Percentages of Prospective Teachers and Other College Bound Students with Specific Social Studies Courses in their Curricula

Group	*n*	Economics N	Economics %	Geography N	Geography %	American Government N	American Government %	American History N	American History %	World History N	World History %
High School A											
Teaching	63	51	81.0	24	38.1	58	92.1	51	81.0	35	55.6
Nonteaching	19	4	21.1	5	26.3	17	89.5	17	89.5	9	47.4
High School B											
Teaching	16	5	31.2			13	81.2	11	68.8	8	50.0
Nonteaching	18	17	94.4	1	5.5	18	100.0	18	100.0	3	16.7
High School C											
Teaching	50	34	68.0	3	6.0	48	96.0	44	88.0	8	16.0
Nonteaching	7	2	28.6	4	57.1	7	100.0	6	85.7	7	100.0

Table 4

Numbers and Percentages of High School Students Reading at Specific Grade Levels on the Nelson-Denny Reading Test

Group	*n*	Grade Levels < 9.0 N	< 9.0 %	9.0-10.9 N	9.0-10.9 %	11.0-11.9 N	11.0-11.9 %	12.0-> 12.0 N	12.0-> 12.0 %
Teaching	138								
Vocabulary		79	57.2	40	29.0	10	7.3	9	6.5
Comprehension		73	52.9	26	18.9	14	10.1	25	18.1
Total Reading		74	53.6	42	30.4	8	5.8	14	10.2
Nonteaching	50								
Vocabulary		27	54.0	15	30.0	3	6.0	5	10.0
Comprehension		22	44.0	12	24.0	4	8.0	12	24.0
Total Reading		23	46.0	16	32.0	4	8.0	7	14.0

teaching sample read at or above the 11.0 grade level.

ACT Sample Test Scores

The mean sample ACT subtest and composite scores for the high school students interested and not interested in teaching are contained in Table 6. The mean scores for college freshmen prospective teachers from Black Belt counties and other geographic areas are also included in Table 6. The highest scores for all groups were on the English Usage and Natural Sciences Reading subtests. The lowest scores for all groups were on the Mathematics Usage and Social Studies Reading subtests. Mean composite ACT scores of High School A and B students interested in teaching were lower than the mean composite ACT scores of those not interested in teaching. Since the standard error of measurement for each of the four ACT subtests is approximately 2, and the standard error of measurement of the composite ACT score is approximately 1, the chances are two out of three that differences of mean scores of these magnitudes constitute true differences *(The ACT Assessment Counselor's Handbook, 1983).*

Scores on the Mathematics Computation Test

The California Achievement Mathematics Computation Test includes addition, multiplication, subtraction, and division of whole numbers, decimals, and fractions. The test is comprised of 40 items and measures basic functions in arithmetic. No Algebra is included. The numbers and percentages of high school students missing 5 or less, 6 to 10 and more than 10 computation problems are shown in

Table 5
Numbers and Percentages of College Freshmen Interested in Teacher Education Reading at Specific Grade Levels on the Nelson-Denny Reading Test

Group	n	Grade Levels < 9.0 N	%	9.0-10.9 N	%	11.0-11.9 N	%	12.0- >12.0 N	%
Black Belt Sample	21								
Vocabulary		14	66.7	6	28.6	1	4.8		
Comprehension		11	52.4	6	28.6	2	9.5	2	9.5
Total Reading		13	61.9	6	28.6	1	4.8	1	4.8
Non Black Belt Sample	49								
Vocabulary		26	53.1	8	16.3	3	6.1	12	24.5
Comprehension		26	53.1	14	28.6	2	4.1	7	14.3
Total Reading		30	61.2	6	12.2	5	10.2	8	16.4

Table 6
Mean ACT Sample Test Scores of Prospective Teachers and Other College Bound Students

Group	n	English Usage	Mathematics Usage	Social Studies Reading	Natural Sciences Reading	Composite Score
High School A						
Teaching	65	13.90	10.84	11.20	15.55	12.41
Nonteaching	19	14.68	12.57	13.25	14.21	13.83
High School B						
Teaching	16	11.06	9.62	8.31	12.62	10.37
Nonteaching	26	16.46	11.92	11.26	14.28	12.96
High School C						
Teaching	48	15.20	11.41	10.58	15.08	13.02
Nonteaching	15	11.60	10.00	7.28	12.14	9.85
College Sample						
Black Belt	17	10.41	4.58	7.17	12.41	8.88
Other	19	11.52	7.36	9.68	13.57	10.68

Table 7. Students missing 6 to 10 problems were referred to review sessions, but students missing more than 10 problems were urged to take or repeat a General Mathematics course. Students interested in teaching at High Schools A and C seemed to have better basic computation skills than the students not interested in teaching. However, more students in the total sample not interested in teaching (54%) missed only five or fewer problems than students who were interested in teaching (49.3%). Also, more students interested in teaching (30.4%) missed from six to 10 problems than students not interested in teaching (24%). Approximately one-fifth of all the students missed more than 10 problems and probably needed to repeat or take a basic mathematics course. The most common problems missed were fraction problems. The second most missed items were the decimal problems and the most often missed whole number computation problems were division. Students seemed to have mastered addition, subtraction, and multiplication of whole numbers.

Preliminary Effects of Test-Taking Training

No student has completed the individualized plan of action to increase the ACT score, nor have most students taken the ACT since they were exposed to test-taking training and practice. Consequently, follow-up is needed to adequately measure the effects of the treatment program. However, some initial data were available for preliminary measurement of training effects.

Three comparisons of mean composite ACT

Table 7
Numbers and Percentages of High School Students Missing Specific Ranges of Items on the California Achievement Mathematics Computation Test

Group	*n*	Number of Items Missed 10 N	10 %	6-10 N	6-10 %	5 N	5 %
High School A							
Teaching	64	10	15.6	20	31.3	34	53.1
Nonteaching	16	6	37.6	5	31.2	5	31.2
High School B							
Teaching	17	4	23.5	4	23.5	9	53.0
Nonteaching	28	2	7.1	6	21.4	20	71.4
High School C							
Teaching	57	14	24.6	18	31.6	25	43.8
Nonteaching	6	3	50.0	1	16.7	2	33.3
Total Sample							
Teaching	138	28	20.3	42	30.4	68	49.3
Nonteaching	50	11	22.0	12	24.0	27	54.0

scores were made using the *t*-statistic for correlated data. The first comparison was between the mean scores of 23 students who took the regularly scheduled ACT after they had taken the sample ACT during the training. Table 8 contains the means and the *t*-statistic, which is significant at the .01 level of significance. Provided the sample ACT is correlated sufficiently with the regularly scheduled ACT, the actual ACT scores decreased after treatment. The actual ACT may have been more difficult than the sample test. Also, the test-taking trainer was present during the sample test and constantly reminded the students to use certain skills. No coaching occurred during the regularly scheduled test.

The second comparison was betwen the scores of four students who had taken the regularly scheduled ACT before and after the training. The data in Table 9 show that the means of the two tests were not different. Examination of the raw data reveals that each score was higher after treatment, one score increasing from 12 to 24. However, the sample size is too small for conclusive statistical testing.

Finally, the mean scores of 25 students who took the regularly scheduled ACT before the training and took the sample ACT during the training were compared. The data for the comparison are contained in Table 10. The *t*-statistic was significant at the .01 level, which means the scores on the sample practice test during training were higher than the scores on the actual ACT taken before the training. Again, the training may be effective, the coaching

Table 9
Comparison of Actual Composite ACT Scores Before and After Treatment

Group	Mean	n	df	t
Before treatment	9.75	4		
After treatment	13.50	4	3	1.46

Table 8
Comparison of Mean Composite Scores on the Actual ACT After Treatment with Sample Composite ACT Scores During Treatment

Group	Mean	n	df	t
Sample ACT Test	11.95	23		
Actual ACT Test	9.39	23	22	4.94*

*$p < .01$

Table 10
Comparison of Actual Composite ACT Scores Before Treatment with Sample Composite ACT Scores During Treatment

Group	Mean	n	df	t
Before treatment	11.00	25		
During treatment	12.36	25	24	3.23*

*$p < .01$

during training may be causing the increase or the sample test could be easier than the actual ACT.

Discussion

The data in this study are congruent with previous findings that (a) the highest minority student ACT scores are in English Usage and Natural Sciences Reading, (b) the lowest ACT scores are in Mathematics Usage and Social Studies Reading, (c) minority students are not taking college preparatory courses in high school, although they intend to complete a four-year college program, (d) the majority of high school and college freshmen prospective teachers do not read at a grade level adequate to achieve a 16 on the ACT, (e) students who miss more than one-fourth of basic computation problems do not know fractions, decimals and division, and (f) test-taking skills training alone does not increase ACT scores except in isolated cases. The main causes of low ACT scores is underpreparedness in content areas tested by the ACT and low reading levels.

Further study is needed to test the effectiveness of the treatment program. Follow-up is planned for the 1984-85 school year to compare ACT scores of students who have completed the individualized plan of action with their scores on the sample test and actual ACT tests.

Recommendations to the counselors and principals included (a) adding Geometry and Algebra II classes in the curriculum, (b) hiring a developmental reading teacher to work with those students who read below the 11.0 grade level, (c) involving parents in encouraging students to take the college preparatory courses, (d) offering four years of science and social studies classes, and (e) providing mathematics laboratories for students who do not have adequate skills in basic computation.

Finally, recommendations to colleges of education at historically black colleges include (a) identifying potential candidates for teacher education in the ninth grade so that the students will plan a college preparatory curriculum which will enable them to make a 16 on the ACT, (b) following high school and college freshmen prospective teachers in their progress so that areas of underpreparedness can be immediately identified and corrected, (c) conducting inservice training for counselors and advisors to explain the need for advisement based on needs for successful entry into teacher education programs, and (d) securing funding to offer summer and weekend enrichment courses that cannot be provided by high schools and college departments because of restrictions on funding for remedial programs. Since the data in this study indicate that prospective teachers are even less prepared than students going into other majors, recommendations to the high school principals and counselors and to the colleges of education at historically black colleges are crucial to the prevention of further reductions in the numbers of teachers trained at historically black colleges.

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Tutoring Children in Kindergarten Through Grade 3: A Model for Improving Teacher Education Majors' Basic Skills

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Two current issues facing our American society are teacher competence and pupil competence as demonstrated on test performance. A major concern among predominantly black institutions and public education, throughout the nation, is the inability of teachers being trained in education to pass state certification tests in various educational fields and the inability of children in public education to pass standardized and state minimum competency tests. According to 1981 state publications, one problem appears to breed the other (*Alabama Journal of Education/Alabama Education Association*, 1981).

Although common to the seven predominately black institutions of higher education in Alabama, the problem of teacher test failure has continued to plague both inservice and preservice teachers at Alabama State University in Montgomery. Recognizing the problem of skill mastery as demonstrated by performance on standardized tests, more evidence of skill mastery is imperative. Furthermore, the problem of low test results at all grades plagues public school systems across the state. In particular, the low test performance of children in the Lowndes County Public School system demands attention.

According to institutional research documents produced at Alabama State University, it is reflected that over 80% of the students enrolled in teacher training are products of rural backgrounds in Black Belt counties in Alabama (ASU Institutional Research, 1981-1983). Moreover, the college entrance ACT mean score of rural students from Alabama Black Belt counties entering Alabama State University falls below the national average. According to 1981-1983 documents produced through the State Department of Education, test scores on California Achievement Tests were significantly lower among children in rural Black Belt counties in Alabama than in metropolitan areas of Alabama (*Alabama Journal of Education*, 1981).

This research study was designed to develop a program guiding teacher education majors in their mastery of specific sets of teaching skills through tutorial services to children in Kindergarten through Grade 3 (K-3) who live in Hayneville, Alabama. Moreover, this study served as a vehicle for the development of skills in children in Hayneville diagnosed to be experiencing difficulty in reading, language, and mathematics.

An earlier attempt by the researcher to deal with the issue of teacher, child, and parent competencies was demonstrated through the 1981 Child Development and Family Life Trainer Technician Program designed mainly for paraprofessionals who work with children and parents in Black Belt day care centers (ACHE, Williams, 1981). Through this medium, numerous significant gains were realized. Results of this project showed a need to address competence at all levels. Further efforts have been made through numerous early childhood seminars and workshops implemented in Black Belt counties by this researcher.

Statement of the Purpose and Research Hypotheses

The purpose of this study was two-fold:

1. To increase skills among low achieving pupils in K-3 in reading, language, and mathematics through a specialized tutorial program, and . . .

2. To increase and strengthen teacher mastery of basic skills in reading, language, and mathematics through tutoring children in K-3.

The hypotheses generated in this research study were as follows:

1. Specialized tutorial sessions will increase skills among low academic achievers (K-3) in reading, language, and mathematics.

2. Students in teacher education will significantly increase their skills in reading, language, and mathematics by tutoring children in K-3.

Review of Related Literature

Effects of Tutoring on Children

Traditionally, one of the fundamental goals in

early childhood education has been to conform the teaching environment to the learning environment. A model of teaching identified through the literature as a traditional technique of developing cognitive skills is tutoring. As an approach to the study of teaching and learning, tutoring has been found to be well documented as an effective instructional method throughout numerous national professional education resources (Eisenberg, 1981). By definition, tutoring is an educational process, at any level, through which students are taught individually or as one of a small group (Joyce & Weil, 1972).

In various research identified throughout the literature, tutorial services have been developed and implemented with some degree of success among disadvantaged children. In a follow-up study by Eisenberg, Fresko, and Cameli (1981) of disadvantaged children two years after being tutored in the Perach Project, the findings indicated that tutored children tended to study in more conventional settings, possessed higher aspirations, and reported doing homework regularly. However, no differences were revealed on self-concept, satisfaction with school, level of curriculum, and the possibility of taking matriculation examinations. The major goals of the project were to increase the motivation, achievement, and self-confidence of children through the establishment of a close personal relationship between tutor and child. Tutors aimed at improving the child's motivation and attitudes toward learning in addition to assisting the child with his or her studies. Improved academic performance combined with a more positive self-concept were expected to furnish the child with the desire and the tools required for remaining in school and for exercising his or her potential to the fullest.

On a short term basis, the project's success in achieving these purposes had been limited, as was seen from the results of an evaluation study carried out in 1977-1979 (Eisenberg, Fresko, & Carmeli, 1980, 1981). Findings indicated that tutored children did not appear to be progressing faster than non-tutored children with respect to their cognitive achievement, as measured by standardized tests in the areas of reading comprehension, mathematics, and English as a foreign language. However, the tutored children did exhibit greater satisfaction in school, felt themselves to be participating more in class, and were reading more outside school than their non-tutored peers. Reports from parents, teachers, and tutors tended to substantiate these findings.

Obviously, compensatory projects like Perach were aimed at inducing lasting changes, since the true test of any program is whether its impact can be discerned several years later. Two possible types of long-term results may exist, sustained effects and delayed effects.

Sustained effects are those changes deriving from a project that immediately manifest themselves and are maintained several years after the children have left the project. Follow-up studies of educational programs for disadvantaged children (not necessarily tutoring projects) have shown that in many instances a fade-out phenomenon exists; i.e., the immediate effects of the program tend to disappear with time (Goldberg, 1968; Adler, Kahane, & Avgar, 1975). Nevertheless, a number of studies have discovered the persistence of effects one to two years after program treatment is administered (Goodlad, 1979; Smilansky & Shfatia, 1972; Lombard, 1970). In one particular follow-up study of a tutoring project in the United States, improved verbal skills that had been observed as a result of tutoring were seen to have persisted in children after two years (Shaver & Nuhn, 1971).

In contrast to sustained effects, delayed effects are manifested only after participation in a project has ceased. They may be thought of as changes elicited by program treatment that either remained dormant or did not lend themselves to proper measurement on a short-term basis. These changes may manifest themselves several years after participation has stopped because only then do the right situations present themselves or because other subsequent experiences of the child build upon the initial foundation laid by activity in the project.

Delayed effects are less often sought; however, they have been observed in a number of past follow-up studies. The most recent among them is a study focusing on the Perry Preschool Program in the United States. Results indicated that 11 years after participation in the preschool project, teenagers exhibited lower rates of juvenile delinquency, a stronger commitment to school, higher employment rates, and a reduced need for special education services (Schweinhart & Weikart, 1980).

Further results, however, of the Perach Project showed that two years following participation, tutored and non-tutored children could be differentiated from each other more on value related matters than in behavioral terms. In other words, whatever differences existed at the time of tutoring between the two groups in classroom behavior, etc., seemed to have vanished and in their stead have appeared differences in the emphasis placed on academic success. Tutored children seem to attach greater importance to success in school; they wanted to do well and continue on. Even the fact that they reported their best in academic school subjects implied that they internalized the value that modern society puts on academic achievement.

Effects of Tutoring by Trained Paraprofessionals

In research by Williams (1977) conducted at the Far West Laboratory, more support for the use of

tutoring is documented in a math tutoring study comprised of three separate research efforts investigating the effects of tutoring by trained paraprofessionals upon children in fourth and fifth grades in the areas of mathematics, attitude toward mathematics, and external locus of control as related to mathematics. The study involved the investigation of the relationship between certain tutoring skills and pupil outcomes in those areas to study whether the efforts of mathematics tutoring were associated with the ability level of pupils in those areas. The four research questions asked were:

1. Are there differential effects from systematic mathematics tutoring associated with the initial ability level of tutored pupils on a set of dependent variables?

2. Do pupils who receive systematic mathematics tutoring from tutors trained in tutorial skills perform better on a set of dependent variables than pupils of comparable ability who receive systematic mathematics tutoring from tutors who have not had mathematics tutoring training?

3. Do puils who receive systematic mathematics tutoring perform better on a set of dependent variables than pupils of comparable ability who receive no systematic mathematics tutoring?

4. Are there particular combinations of tutoring skills or interpersonal behaviors which are positively related to specific pupil outcomes?

In order to answer these questions, three treatment conditions were specified:

1. Minicourse 5 and mathematics trained tutors, in which paraprofessional tutors received training in specific tutoring skills and training in specific mathematics skills and concepts and then tutored each of six pupils individually in four 15-minute sessions per week for nine weeks.

2. Mathematics only trained tutors, in which paraprofessional tutors received training only in specific mathematics skills and concepts and then tutored each of the six pupils individually in four 15-minute sessions per week for nine weeks.

3. Control treatment to which no paraprofessional tutors were assigned.

To determine the general effects of tutoring, the following analyses were completed:

1. One-way analysis of variance with four blocks based on pupils' entry level ability on each of the dependent measures.

2. Deviation regression analyses were conducted to provide preliminary information concerning the relationship of tutor skills to pupil outcomes.

3. Communality regression analyses were performed to provide more thorough investigations of the relationships of particular clusters of tutor skills and interpersonal behaviors to pupil outcomes.

The results of these analyses showed a high correlation between the effects of tutoring on mathematics achievement and pupil attitudes and the relationships of tutoring to pupil outcomes.

Effects of Tutoring as a Teaching Technique in Teacher Training

Within the broader framework of research on teaching at the Far West Laboratory, further study on the tutoring process was conducted as part of the Effective Teacher Education Program (ETEP) (Cohen, et al., 1982). From 1973-1975, ETEP research was devoted to two major purposes: 1) to study the effects upon student outcomes of specific skills and 2) to test various approaches to the study of teaching. Prior to 1973, minicourse training was demonstrated as effective in bringing about desirable changes in teachers' classroom behavior. Through ETEP, four approaches were implemented.

1. The semi-programmed approach was used in the ETEP questioning studies. In this approach, the teacher was provided with a set of curricular materials which were to be used in a specific sequence at stated times.

2. The Experimental Teaching Unit (ETU), was incorporated as a sub-study of the mathematics study with teachers as tutors.

3. Paraprofessionals were trained to use a particular set of skills and then the effects were studied when the skills were applied in a content area that was ongoing in the school setting.

4. Teachers were trained in a new educational program; the program was put into action; the effects of students were studied.

Effects of Home Tutoring

Still another innovative pattern of service is the move toward educating children in the home itself (Gray, Ramsey, & Klaus, 1982; Honig, 1982). Many home tutoring programs are based on the idea of a weekly visitor who brings materials for the children to use but who also focuses on drawing the mother in so that she gradually adds to her personal repertoire ideas and activities that enhance her youngster's growth. The long term benefits of this approach to the family are obvious. Furthermore, tutoring of mothers and fathers of infants and children through parent cooperatives continues to operate effectively as an old standby that has played a valuable role in educating families for many years (Taylor, 1981).

Effects of Peer Tutoring

Peer tutoring has been used for many generations in educational practice. Believed to benefit both tutor and tutee, tutoring has come to be viewed as a cost-effective instructional supplement in classrooms and as a basic element in socialization within certain cultures (Bronfrenbrenner, 1970). Empirical studies have mainly concerned the

outcomes of the tutoring experience—either for the child doing the teaching or the child being taught. Benefits to the tutor are believed to include increases in motivation and task involvement that lead, in turn, to gains in school achievement (Hartup, 1983).

In a current study of teaching behaviors of 9 and 11 year old girls in mixed-age and same-age dyads, results were consistent with the hypothesis that elementary school children possess an implicit "theory of teaching" which assumes a) that younger children require more supportive and corrective feedback than same-age children (Luedke & Hartup, 1983). Furthermore, cross-age tutoring has been consistently documented (Myrick, 1983; Johnson, 1974; Sarbin, 1976).

Summary Review of Related Literature

The review of the related literature on tutoring illustrates the effectiveness of tutoring on pupils and or by pupils on pupils, on teaching personnel and or by teaching personnel, and by parents on children. This review revealed that teacher education programs must facilitate the area of instruction through the utilization of various teaching methodology if it is to be effective in the development of teachers and learners.

Method

Subjects

In this study, 16 students (two males and 14 females) enrolled in the Teacher Education Program (Early Childhood and Special Education) of Alabama State University were randomly selected and assigned to work with 20 children (12 boys and eight girls) in K-3. The children had been identified by local administrators of the Lowndes County Board of Education as repeaters in one or more grades and as low academic achievers in Lowndes County Public Schools.

All subjects who participated in this study were black. The Alabama State University students were products of Alabama rural backgrounds of which eight worked as classroom teachers with children (K-4) in rural county public schools in Alabama.

Design and Experimental Procedures

The experimental research design used in this study was the Two Independent Groups Design. Of the 20 children identified in this study, 10 children were randomly assigned to an experimental group while the remaining 10 children were randomly assigned to a control group. All children shared common cultural and socioeconomic backgrounds. Specifically, all children were black, lived in the same neighborhood ("across the track"), enrolled in the Lowndes County Public School System in grades K-3, scored below the 49th percentile on the California Achievement Test in 1983, and were identified by administrators of the Lowndes County Board of Education as low or underachievers.

The 16 students enrolled in teacher education (Early Childhood and Special Education) at Alabama State University who participated in this study were randomly selected and randomly assigned to experimental and control groups which constituted eight subjects in each group.

The experimental group of teacher education students were assigned to provide tutorial services to the experimental group of children in K-3. The control group of teacher education students was assigned to provide traditional teaching to the control group of children in K-3.

For three weeks (Monday through Thursday), during the 1983 summer period of July 25 through August 11, a team of 16 students enrolled in teacher education courses in Early Childhood and Special Education provided skill development services to 20 children identified by local administrators of the Lowndes County Board of Education as low achievers in reading, language, and mathematics. The three-week study involved eight students who tutored 10 children on a rotating basis in grades K through 3 in 12 four-hour sessions on Monday through Thursday, beginning at 9:00 a.m. and continuing to 1:00 p.m. The remaining eight teacher education students provided traditional instruction to the remaining 10 children identified in this study.

Tutorial activities consisted of programmed modules which were designed to improve skills among children in areas where pretest results indicated them to be deficient. Both student developed and commercially developed instructional aids were utilized.

Teacher education students devoted four hours per week to theory lecture and testing, follow-up discussions, and planning.

Baseline Data and Analysis

To begin the study, a pretest from the Comprehensive Tests of Basic Skills (McGraw-Hill, 1973) was administered to the experimental group and control group of children in Grades K-3 to ascertain baseline data in reading, language, and mathematics. The experimental group received a treatment condition which entailed 12 hours per week of tutorial sessions in reading, language, and mathematics while the control group did not receive a treatment condition of tutorial sessions.

In order to determine baseline data in reading, language, and mathematics ascertained by teacher education students in Early Childhood and Special Education, a pretest was given from content skills represented in the Informal Mastery Inventory in Reading and Language (Raygor & Gotz, 1981). In

addition, daily observations of students demonstrating skills in reading, languages, and mathematics were monitored by the project director.

In order to determine significant gains of children in Grades K-3, a post-test from the Comprehensive Tests of Basic Skills in reading, language, and mathematics was administered to children in K-3 (McGraw-Hill, 1983).

In order to determine significant gains among teacher education students, a post-test of skills in reading, language, and mathematics was administered from the Informal Mastery Inventory in Reading and Language and the Brigance Inventory of Essential Skills (Raygor & Gotz, 1981).

A t-test was used to measure statistical differences occurring between pretest and post-test assessments of basic skills in reading, language, and mathematics of children in Grades K-3 and basic skills in reading, language, and mathematics for teacher education students in Early Childhood and Special Education.

Results

The purpose of this study was to increase skills among low achieving pupils in K-3 in reading, language, and mathematics through a specialized tutorial program and to increase and strengthen teacher mastery of basic skills in reading, language, and mathematics through tutoring children in K-3.

It was found on the pretest of basic skills in reading, language, and mathematics, there was no statistical significant difference between the experimental and control groups of children in K-3, $t(18) = .001$, $p < .10$. However, post-test data results of basic skills in reading, language, and mathematics among children in K-3 showed a high statistical significant level of improvement in comparison to the control group, $t(18) = 3.10$, $p < .01$.

Pretest data results of basic skills in reading, language, and mathematics of students in teacher education reflected no statistically significant difference between the experimental and control groups, $t(14) = .33$, $p < .10$. On the other hand, post-test data results of basic skills in reading, language, and mathematics of students in teacher education reflected a significant increase in the attainment of basic skills, $t = 2.17$, $p < .05$). This increase was in favor of the experimental group.

Discussion

This study was designed to increase skills among low achieving pupils in K-3 in reading, language, and mathematics through a specialized tutorial program and to increase and strengthen teacher mastery of basic skills in reading, language, and mathematics through tutoring children in K-3.

Based on the data collected, it is reasonably safe to report that the findings in the study showed significant gains in basic skills of reading, language, and mathematics among children after exposure to tutorial services and among students in teacher education when given the responsibility to implement basic skill content with children in K-3. Furthermore, this study evidenced a consistency to learn basic skills when given the task to teach certain skills.

After analyzing the data within groups, it was found that both the experimental and control group of children increased their scores in basic skills in every case. However, the experimental group increased its mean score by 25.6 points while the control group's mean score increase 10.9. Test scores of six girls was significantly higher in both pre- and post-test results than that of 10 boys.

Nevertheless, the results of the data clearly demonstrated that children diagnosed as low achievers in basic skill content showed a significant rate of growth when assisted with programmed activities specifically aimed at areas of deficiency.

Recommendations

Based on the results of this study, the following recommendations are offered:

1. That the Lowndes County Board of Education adopt this tutorial program as a continuous Summer Achievement Workshop for Children.

2. That Alabama State University continuously involve teacher education students in Early Childhood and Special Education in providing tutorial services for children in reading, language, and mathematics in order to increase their own skills.

3. That this study be replicated for development over a period of time longer than three weeks.

4. That the content and skills in reading, language, and mathematics provided in this research study become a model for use on a wider scale with a larger research sampling in the Lowndes County area.

5. That teachers in K-3 classrooms in Lowndes County become introduced more fully to the findings in this study to permit further planning for use in the educational program.

6. That after final planning through the Lowndes County Board of Education, major periodic inservice training sessions with teachers become implemented by the project director to further follow-up and monitor progress made by children involved in this program.

7. That the concept of tutorial services pursued

with children in K-3 and beyond become an after school reality during the regular school year.

8. That this research project actively involve parents in the tutorial approach to foster reinforcement and regular learning activities in the home for the development of basic skills.

9. That this model be further developed to incorporate parent activities related to basic skills in reading, language, and mathematics for use with their children beyond the school day.

10. That programmed activities in the basic skills in reading, language, and mathematics be instituted as workshop seminars not only for teachers and other public school personnel, but for parents as well.

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Self-Perceptions, Locus of Control, and Perceptions of High School Students Regarding Standardized Testing and Teaching as a Career

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The decreasing number of black students in teacher education programs and the subsequent decrease of blacks in the teaching profession constitute a real phenomena. A number of reasons have been given for the decline; the most frequent reasons are failure to make at least 16 on the American College Test (ACT) (for Alabama) and to pass the state teacher certification examination. Teaching is one of the few professions to which blacks have historically had free access. The recent obstacles to entering teacher education could result in negative impacts upon the psyche of black high school and college students who want to be teachers. These obstacles could alter the attitudes of black youth toward teaching as a career. Consequently, there is a need to investigate black high school students' self-perceptions and attitudes toward teaching as a career. A need exists to investigate locus of control among this group.

Standardized Testing

Standardized testing is a controversial contemporary issue. This is true of personality tests, a major concern during the 1960s, and of test bias, a major concern of the 1970s. Standardized tests have been used to predict academic achievement, assess intelligence and measure personality. Their use as admission criteria was traced to the formation of what is called *meritocratic philosophy* (Cross, 1972). This philosophy was based on academic merit. It resulted in academic-aptitude tests becoming obstacles to college admission. One of the objectives was to provide colleges with assistance in coping with a growing diversity among applicants (Donlon, 1981-1982).

Traditionally, the College Board offered a number of achievement tests. These tests placed heavy emphasis on curriculum; therefore, a test was needed that was not extremely curriculum oriented. The College Board, in 1926, introducted the Scholastic Aptitude Test (SAT). This test has been used extensively in education. Realizing that improved predictors of success would be mutually beneficial to the profession and to the candidate, educators and others began constructing performance tests. Predicting teaching success before entry into student teaching would provide teacher education institutions the opportunity to enrich the quality of education offered to those candidates most likely to succeed (Shivley, 1982). Given this apparent advantage of performance tests within education, 21 states are implementing, or planning to implement, testing requirements as part of the criteria for admission to teacher education programs. Florida requires a score of 17 on the American College Test (ACT) or a score of 835 on the Scholastic Aptitude Test (SAT) for admission to teacher education programs (Mercer, 1984). Alabama requires 16 on the ACT or 745 on the SAT; other states have similar requirements.

Hargadon reported that grades and test scores together are the best predictor of all (Brandt, 1980). However, there is no perfect predictor. Cole (1983) supported this by asserting that no sole criterion should be used for such critical determinations as graduation, promotion, certification, college entrance, and hiring. To use them is to inhibit the inclusion of blacks into America's mainstream; this would further stratify society.

Locus of Control

Rotter (1966) introduced the construct of locus of control to explain the relationship between behavior and reinforcement. He noted that the effect of reinforcement upon behavior is a function of the extent to which people perceive reinforcement as due to their own efforts or to fate, luck, or powerful others. With his Locus of Control Scale, Rotter was able to categorize persons as having either an internal or external locus of control orientation. Phares, Ritchie, and Davis (1968) noted that Rotter's construct points to a distinction between social perception with internals depending more heavily on inner sources as compared to externals who tend to attribute events to social pressures. Phares (1976) suggested that internals are more active than externals in efforts to shape their environment.

Battle and Rotter (1963) compared middle class

blacks and whites and reported that when social class was controlled, no significant differences were found. However, when middle-class Euro-Americans were compared with lower-class Afro-Americans, a significant difference emerged in the expected direction with Afro-Americans displaying more externality. This difference is often reported as a racial difference rather than as an economic difference (Shade, 1982). Scott and Phelan (1969) studied unemployed adult males between the ages of 20 and 28 and reported racial differences. This difference may reflect the greater understanding of unemployed Afro-American males about their situation and may epitomize the Afro-American view of the world (Shade, 1982). Gurin and Epps (1975) reported that Afro-Americans seem to have a higher ability than others to differentiate between situations in which they have control and those in which others have the most influence. Support for this finding is provided by DuCette and Wolk (1973) and Kinder and Reeder (1975). Meacham (1972) reported that blacks attending junior college were more internal. Harris and Phelan (1973) investigated the effect of segregated and integrated settings and noted that blacks in integrated settings displayed a stronger external orientation. Leftcourt (1976) and Ames (1978) suggested that locus of control may be related to social climate and learned helplessness.

Self-Perceptions

Self-concept refers to the description we hold of ourselves based on the roles we play and the personal attributes we possess. Self-esteem refers to the level of satisfaction we attach to the description or part of it. Self-esteem decisions are based on our values. Self-perceptions are age-related and are influenced by significant others. Significant others will vary based on developmental status. Johnson (1982) studied the structure of self-concept in inner-city children and concluded that six basic factors are important dimensions of self-report in a school setting: positive peer relationships, positive family relationships, feelings of academic competence, positive self-description, denial of negative feelings, and enjoyment of the classroom situation.

A persistent relationship has been found between various aspects of self-perception and a wide variety of school-related variables. Self-concept is seen as related to school achievement—either in a direct causal fashion or in a cyclical constant feedback mode, where change in self-concept affects the individual's perception of himself (Purkey, 1970). The linkage between self-concept and achievement has been reported in a number of studies (Dean, 1977; Doran & Sellers, 1978; Williams & Cole, 1968). Caplin (1966), Godfrey (1970), and Andrews (1971) reported that black elementary school children with high positive self-concepts had higher academic achievement scores. Campbell (1981) reported significant positive relationships between the self-concept total score and reading achievement.

It is expected that some learners will fail; it is expected that some will do so consistently. This failure has a cumulative effect for the learner (Purkey, 1970) and becomes embedded in teacher expectations (Kash & Borich, 1978). Within this framework, there are interaction effects between the learner's self-concept and his/her school achievement (Bloom, 1980). The general idea that "one success may lead to another" is supported by Bailiffe (1978).

Teachers, as significant others, must consistently signal learners that they can successfully pursue the academic, social, and personal goals of school experience. The learner's self-concept and self-esteem may account, to a larger degree, for school success and may be enhanced by teacher action (Beane, Lipka, & Ludewig, 1980). These authors delineated what teachers should be aware of and techniques to facilitate the development of a positive self-concept.

As persons develop positive self-concepts they become more open to experience; they do not need to distort the environment that they are perceiving. They are able to receive stimuli from all sources with less distortion and experience their world more fully; they become able to learn effectively in an academic setting (Combs, Soper & Courson, 1963). Jordan (1981) investigated the unique and common contribution of global self-concept, academic self-concept, and need for academic competence to variance in academic achievement in inner-city black adolescents; academic self-concept and need for academic competence accounted for significant proportions of criterion variance.

Career Choice

Adolescents become increasingly able to analyze and understand their interests, values, and aptitudes and apply this information in the occupational choice-making process (Ginzberg, Ginsburg, Axelrad, & Herma, 1951; Ginzberg, 1984; Super, 1955). The major empirical support for postulated gains in self-knowledge from early to late adolescence has been provided by O'Hara and Tiedman (1959). These authors found that boys were better able to estimate their measured work values, interests, aptitudes, and general values as they progressed through school.

Vocational interest inventories are used to help students locate occupations that appear to offer promise for success. The validity question is also applicable to vocational interest inventories. Williams and Whitney (1978) reported that if black students show different response patterns, modifications need to be made in either the

counseling interpretations of such results or in the instruments themselves. Brown, Fulkerson, Vedder and Ware (1983) suggested that career counselors need to consider means of increasing self-awareness. To remediate this problem, the Labor Market Orientation was developed by Nelms and Pentecoste (1982). This program provided training in the pre-choice area.

Relative to teaching as a career choice, several factors have been identified: Fielstra (1955), Richards (1960), and Wright (1977) listed former teachers as an influence; Fox (1961) noted the desire to work with children; Haubrich (1960) indicated job security. The latter led Haubrich to posit the *mattres philosophy* of prospective teachers—that is, something to fall back on. Job security has not been reported as frequently as the chief motivating factor in choosing teaching as a career as the influence of a teacher(s). Roberson, Keith, and Page (1983) reported that job security does not appear to be a strong influence today when other factors are controlled. These authors suggest that the influence of teachers is still substantial. Page and Page (1982) reported that pre-service teachers were more likely than inservice teachers to encourage others to consider teaching. Wood (1978) observed gradual shifts in the reported motivations. Reasons for entering teaching were categorized as self-fulfilling or altruistic. Page, Page, Hawk, and Lindsey (1981) reported that of 1,728 high school seniors surveyed, 11.8% indicated a desire to teach. Relative to blacks aspiring to teach, Roberson, Keith, and Page (1983) reported that whites are more likely to teach than blacks and that high ability blacks aspire to other occupations.

Purpose

The purposes of this study were to investigate self-concept; locus of control; career choice of students exposed to the mandatory ACT requirement; the students' general knowledge about the ACT/SAT; the kinds of tests to which students have been exposed; the instruction they have had in taking standardized tests; the reading habits of the students; their awareness of local facilities; and the number of courses they have taken in English, mathematics, science, and social studies.

Research Questions

1. For subjects exposed to a mandated score of 16 on the ACT, what is the relationship between career rationale and: (a) post-secondary academic route? (b) prerequisites to career entrance?
2. Given the mandated score of 16 on the ACT for entrance into teacher education, how do subjects feel about teacher education?
3. Given the mandated score of 16 on the ACT, what is the locus of control of the subjects?
4. Given the mandated score of 16 on the ACT, what is the global self-concept of the subjects.
5. Given the mandated score of 16 on the ACT, what is the academic self-concept of the subjects?
6. Given the current ubiquity of testing: (a) Are subjects cognizant of the tests used for determining whether one is admitted to college and the best time to take such tests? (b) What types of tests are subjects administered in their schools? (c) Have subjects received training on how to take standardized tests? (d) Are subjects aware of resources that will help to improve their performance on standardized tests? (e) What are the reading habits of the subjects? (f) Are subjects aware of local facilities available that supply reading materials and do they use these materials? (g) How many courses have subjects taken in English, mathematics, science, and social studies?

Method

Subjects

The subjects were 621 high school seniors enrolled in Bullock, Greene, Lowndes, Macon, and Perry Counties' public high schools. They ranged from 16 to 20 years of age. Of the 621 students sampled, 2.3% (N=14) came from Bullock, 25.1% (N=156) came from Greene, 16.9% (N=105) came from Lowndes, and 18.0% (N=112) came from Perry. The largest sample came from Macon County which consisted of 37.7% (N=234) students. Relative to sex, 53.1% (N=321) listed their sex as female and 46.9% (N=291) indicated male.

Instruments

Six instruments were used for data collection. They included: (1) Career Choice Questionnaire, (2) Nowicki-Strickland Internal-External Locus of Control Scale, (3) Rosenberg Self-Esteem Scale, (4) Why Choose Teaching? An Attitudinal Scale, (5) Survey Questionnaire, and (6) Academic Self-Concept Questionnaire. Of these instruments, only two have been validated by extensive research, the Rosenberg Self-Esteem Scale and Nowicki-Strickland Internal-External Locus of Control Scale. The other instruments were developed by authors for use in the current study. Since these instruments (those developed by the authors) do not attempt to measure a particular trait or phenomenon, their reliability and validity are not addressed.

Career Choice Questionnaire. The questionnaire was divided into two parts: selection of academic track and rationale form, and selection of major field and rationale form. Part one determines whether students would choose college or vocational school and the basis upon which they made the decision. The prerequisites for entering college and vocational school were delineated. Subjects were to

select the academic track they would like to follow and write a rationale for their choice. Part two described the prerequisites for entering and remaining in four areas of study in selected programs. Whether going to college or not, subjects were to select a major.

Nowicki-Strickland Internal-External Locus of Control Scale. This is a paper-and-pencil measure consisting of 40 questions that are answered either "yes" or "no" by circling one of the options. This form of the instrument derives from work which began with a large number of items (N=102). It was constructed on the basis of Rotter's definition of the internal-external control of reinforcement dimension. The items described reinforcement situations across interpersonal and motivational areas such as affiliation, achievement, and dependency. Test-retest reliabilities for a six-week period were .67 for the 8-11 year old group (N=98) and .75 for those in the 12-15 year old group. The highest score was 40. The closer one's score was to 40, the more internal s/he was. The closer one's score was to 0 the more external s/he was.

Rosenberg Self-Esteem Scale. This is a measure of global self-concept that consists of ten items in which the students responded by checking strongly agree (SA), agree (A), disagree (D), or strongly disagree (SD). This instrument is listed in *Self-Concept* (Wylie, Miller, Cowles, & Wilson, 1979) as a standard instrument used to measure global self-concept. Jordan (1981) achieved a .61 reliability for females and .52 for males. Responses for SA, A, D, SD, were assigned values from 4 to 1 respectively; however, negatives that were positives were assigned values from 1 to 4. The highest score was 40. The closer one's score was to 40 the more positive the self-concept.

Why Choose Teaching? An Attitudinal Scale. A 59-item attitudinal scale was developed by the authors of the study. The students rated items as strongly agree (SA), agree (A), undecided (U), disagree (D), strongly disagree (SD). The responses from SA, A, U, D and SD received values from 5 to 1 when a positive attitude was expressed and from 1 to 5 when a negative attitude was expressed as positive. The highest possible score was 295. The closer one's score was to 295 the more positive was the attitude.

Survey Questionnaire. This is an instrument designed by the authors (1) to determine the subjects' general knowledge about the administration of the ACT and SAT; (2) to determine the types of tests subjects usually have in their classes; (3) to determine if subjects have had any instruction on how to take standardized tests and if they knew about private companies that provide such services; (4) to determine the subjects' reading habits; (5) to determine subjects' awareness of local outlets for procuring reading materials and the extent to which they are utilized, and (6) the courses the subjects had taken in English, mathematics, science, and social studies. Frequency counts were taken for each question.

Academic Self-Concept Questionnaire. This is an eight-item scale that asked the students to rate their abilities to close friends and to others in their classes; to rank themselves; to rate their ability to do college work in selected subjects; to rank themselves in college classes; to determine whether they can complete work beyond college; to rate the quality of their work and the kinds of grades they are capable of getting in selected subjects. A Likert-type rating form was used. A progression from positive to negative phrases was used for five choices for the student to rate him/herself on each of the eight questions. From positive to negative, the values were from 5 to 1 and vice versa. The highest positive score was 160. The closer one's score was to 160 the more positive the academic self-concept.

Procedures

Local superintendents in Bullock, Greene, Lowndes, Macon, and Perry counties were contacted for permission to conduct the study. In consultation with high school principals, dates were established for administering the instruments and questionnaires. After establishing an agreeable schedule for collecting the data, the researchers visited the high schools and administered the instruments during a general assembly. Students were given instructions for completing the instruments/questionnaires and informed that they could return to class as soon as they finished.

The data were coded and analyzed with SPSS11 (Statistical Package for the Social Sciences for mini-computers). Analysis consisted of descriptive statistics, chi square, and Cramer's V. These statistical procedures permit calculation of averages (measures of central tendency) and standard deviations, test of differences, and test of associations. Throughout the analysis, the .05 level of significance was used to test the null hypothesis.

Results

The purposes of the study were to investigate the self-concept, locus of control, and career choice of students exposed to the mandated ACT requirement and to examine (a) their general knowledge regarding the American College Test and the Scholastic Aptitude Test; (b) the kinds of tests exposed to in high school; (c) their formal preparation for taking standardized tests; (d) their reading habits; and (e) the number of courses they have taken in English, mathematics, science, and social studies. To achieve these purposes, this

hypothesis was derived from the research questions: For students exposed to the mandated ACT score, the relationship between career rationale and post-secondary academic route and career rationale and prerequisites to career entrance will not be significant.

In addition to testing the above hypotheses, descriptive assessments were made of attitudes toward teacher education; locus of control; self-concept; academic self-concept; general knowledge regarding the ACT and SAT; the kinds of tests exposed to in high school; their formal preparation for taking standardized tests; their reading habits; and the number of courses they had taken in English, mathematics, science, and social studies.

Relative to selection of academic route, 67.2% (N=401) of those surveyed indicated vocational school and 32.8% (N=196) expressed a desire to attend college. Regardless of the academic route selected, the subjects did not provide rationales that reflected analyses of the requirements for attending either. Subjects made responses based on personal or experiential views. Subjects selecting vocational routes wanted to do so because it was fun in high school, because the schools placed you on a job after completing the program, because it does not take an extended period of time, and because they were interested in careers that required the completion of vocational school. Of these, only the time element reflected a consideration of the criteria. Those who chose the college route did so because it would improve their chances of getting a good job; it provided opportunities to improve their academic skills; it was a family tradition and it provided the entry-level skills required for the subject's proposed career. Rationales did not reflect any of the criteria listed.

Relative to the selection of a major, 11.6% (N=63) desired to major in education, 37% (N=201) listed computer science, and 9.4% (N=51) indicated telecommunication. The most popular desired major was business; 42% (N=228) of the subjects selected this area.

Subjects did not exhibit an extremely positive or negative attitude toward teaching; their attitudes are best described as borderline and in the positive direction ($\bar{X}$=189.6). Relative to locus of control, the mean score of 24.9 suggested an internal locus of control orientation. Both of the self-concept measures, global ($\bar{X}$=189.6). Relative to locus of control, the mean score of 24.9 suggested an internal locus of control orientation. Both of the self-concept measures, global ($\bar{X}$=30.8) and academic ($\bar{X}$=109), emerged positively.

Relative to general awareness or knowledge of the ACT, SAT, CAT, and GRE, 93.4% (N=579) expressed an awareness of the ACT, and 73.4% (N=455) were acquainted with the SAT; the discrepancy is probably because the ACT is the most commonly used aptitude test in Alabama. The California Achievement Test (CAT) and the Graduate Record Examination (GRE) were familiar to 8.9% (N=55) and 4.2% (N=26), respectively. This suggests that students are more cognizant of tests, i.e., ACT, SAT, used for determining whether one is admitted to college. Although 70% of the students were cognizant of their eligibility to take the ACT in the 11th grade, only 38% availed themselves of this opportunity. They cited becoming familiar with the examination as the major reason for taking the examination in the 11th grade. Regarding preparation for admission examinations, students were not aware of coaching schools, such as Stanley Kaplan, that provide tutorial services designed to improve performance on standardized examinations. The most frequent type of examination taken was multiple choice, followed by essay, short answers, matching, and completion.

The final two descriptive items were reading habits and number of courses taken in English, mathematics, science, and social studies. Fifty-three percent of those surveyed knew where the local library was and 58% (N=349) reported that they had visited the library. This low percentage could possibly be attributed to the fact that most of the students reside in rural communities.

When asked to list magazines that they read frequently, 66.5% (N=409) listed *Jet* and *Ebony*, 28.1% (N=173) listed *People*, and 22.2% (N=127) indicated *Newsweek*. *Money*, *Family Circle*, *Better Homes and Garden*, *US*, and *U.S. News and World Report* were also included in the list. Since more than one magazine could be selected, the total percentage does not equal 100. It should be noted that of those who responded, 37.7% (N=203) indicated that they had a personal subscription to at least one magazine.

The number of English, mathematics, science, and social studies courses taken revealed several

Table 1
Number of English, Mathematics, Science, and Social Studies Courses Completed

Courses	Two or Less Count (%)	Four or More Count (%)
English	77 (25.2)	405 (69.9)
Mathematics	282 (48.3)	135 (23.1)
Science	357 (61.8)	95 (26.5)
Social Studies	144 (25.2)	249 (43.6)

interesting characteristics about the sample. Table 1 presents these data. Looking at the table, we note that 32.1% (N=135) of those surveyed had completed four or more mathematics courses, while 48.3% had completed two or less. Similar statistics emerged for science courses but the percentage for two or fewer courses was higher (61.8%). Thus, approximately half of the students surveyed had completed more than two science or mathematic courses. The percentage is higher for English and social studies because more credits are required in these areas for graduation.

Discussion

It is significant to note that the subjects exhibited a very positive attitude towards teaching. The respondents who indicated a desire to become a teacher did so because they wanted to help others and work with children. This finding is congruent with the major finding of Fox (1961) and Wood (1978) who indicated that subjects wanted to work with children and to help others.

The fact that the subjects exhibited an internal locus of control confirms the findings of Harris and Phelan (1973) that blacks in a segregated setting are more internal. Subjects in this study were from all black communities and predominately black school districts. Although several researchers (Scott & Phelan, 1969; Battle & Rotter, 1963) have reported that locus of control is a function of race, Shade (1982) argued it is a function of economics. This study raises serious questions about the economic aspects. This study seems to support Gurin and Eppes' (1975) observation that Afro-Americans have a higher ability than others to differentiate between situations in which they have control and those in which other people have the most influence. This is in light of the fact that black people control and operate the government in the counties from which the subjects reside.

Because subjects did not take large numbers of courses in mathematics and the natural sciences, the findings are consistent with Dr. Abraham's observation that students were failing to take courses that would facilitate success. This is inextricably related to the fact that students did not analyze the criteria delineated for making a career choice and selecting a major. Because of the students' responses, the results lend validity to the findings reported by Williams and Whitney (1978) that black students need additional exposure. The recommendation of Brown, Fulkerson, Vedder, and Ware (1983) that career counselors need to consider a means of increasing self-awareness should be heeded.

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Test Taking Skills of Rural Alabama High School Students

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The performance of minority students on standardized examinations continues to be a subject of controversial debates among educators and social scientists. However, minority students who attend rural schools are frequently neglected during these discussions. To be sure, many rural schools may lack resources required to carry out routine activities. Thus, it is often difficult for educators to seriously consider measures that offer promising solutions to problems in education.

While many argue the inadequacy of standardized examinations as effective measures of the educational system, these instruments seem to do fairly well in determining what students know. In view of this information, it is suggested that the problem in measurement stems from the difference in what is being taught, and what students are actually learning. Further, although this concern transcends ethnic and racial boundaries, it is significant that almost across the board, black students are coming out on the low end of the "functional" totem pole (Daub, 1983).

Classroom instructors often speak of students who perform well on subject matter, and on "teacher-made" examinations, suggesting mastery of required subject matter. Still they realize that students may perform well on cognitive tasks in the classroom, and do poorly on standardized examinations designed to measure competency of the same material. The discrepancies in test scores may be confusing to the student, and may also have adverse psychological effects on academic performance, self-concept, confidence, educational, and career decisions. It is therefore suggested that such differences in performance may be the result of poor test-taking strategies. Some strategies frequently referred to as "test-wiseness," or "test-taking skills" can be taught according to researchers in this field (Daub, 1983; Stewart & Green, 1983; Dreisbach & Keogh, 1982; Collenbach, 1971; Eakins, Green & Bushell, 1976; Kalechstein & Doctor, 1981; Wahlstrom & Boersma, 1968).

Paulman and Kennelly (1984) found that many factors intervene during the performance of cognitive tasks. While some of these are interrelated, it is believed that test-anxiety and test-taking skills may be measured independently to reveal the effect of each on test performance.

Further, there is evidence to suggest that familiarization with specific types of standardized examinations such as the Scholastic Aptitude Test (SAT) does not significantly change the scores of examinees. Instead, a review of literature reveals that familiarization with exam-taking skills may be more beneficial than a sample examination. It has also been reported that in addition to skills and abilities, standardized tests may reflect individual differences in prior test-taking experience (Powers & Alderman, 1983). Thus, many test candidates may have knowledge of appropriate strategies for taking particular tests, while others may have considerably less familiarity with tests and test-taking techniques.

Although test preparation books are available through numerous commercial publishers, little documentation exists regarding the effects of these books on either test performance or other exam-taking behaviors. However, some studies have been conducted to demonstrate the efficiency of programmed tests as a technique for increasing test-taking skills. Also, short orientation sessions, such as those advanced by Wahlstrom and Boersma in 1968 have been cited as effective ways to equalize test sophistication (Anastasi, 1981). Messick (1980) has critically reviewed the research on the effects of coaching for the SAT, finding that the length of such programs may be related to the size of the effect on SAT scores.

In an attempt to measure the effects of prior information on examinee confidence, Powers and Alderman (1983) mailed a copy of "Taking the SAT" to early applicants for the exam, and subsequently measured the results against test-takers who did not receive a copy of the booklet. Although the booklet allowed examinees to be less apprehensive about the test, the strength of this approach may have been in the confidence it inspired in test candidates.

Other research conducted in the area of reading shows that teaching test-taking skills helps children do as well on standardized tests as they do in everyday reading (Stewart & Green, 1983). Ad-

ditionally, one of the preferred approaches to teaching test-taking skills is for students to practice under conditions that are almost equivalent to those of the actual test (Campanile, 1981; Eakins, Green, & Bushell, 1976). The method used by these researchers assumed that the basic skills associated with the subject had already been mastered.

Many educators contend that early familiarization with exam-skills is a beneficial part of early education (Stewart & Green, 1983). These authors report that teaching children how to take standardized tests has a positive effect upon their test performance. Other researchers also argue for the necessity of preparing young children for testing (Dreisbach & Keogh, 1982). Additional evidence that test scores can be improved with instruction has been reported by Collenbach (1971), Eakins, Green & Bushell (1976), Kalechstein and Doctor (1981), Wahlstrom and Boersma (1968).

Any attempt to address the problem of test performance of minority students must acknowledge the fact that formal instruction in test skills alone will not improve the performance of all examinees. Different methods work for different students under different circumstances. Careful diagnosis of potential examinees and test conditions can facilitate the selection of appropriate techniques. Support for this argument has been advanced in the research of Crehen, Koehler and Slakter (1974), Diamond and Evans (1973), Gibb (1964), and Jacobs (1966) who reported that children vary in their level and use of test-taking skills; and thus, in their ability to demonstrate their learning on a standardized test. For some, their test performance does little justice to their efforts in school.

In a discussion of competency tests, Daub (1983) points out that even with black participation in desegregated education with improved facilities, current textbooks, and well-trained teachers, black students still do not perform well on standardized tests. The research further suggests that a possible strategy for solving this problem is to teach the skills required to pass competency tests.

Daub's recommendation seems plausible, and offers a springboard for launching relationships between public schools and institutions of higher education. To be sure, it points to a strong basis for developing such a relationship between high schools and historically black institutions, where many students are products of rural environments. Additionally, while schools in rural communities are legally desegregated, students still lack many educational experiences. With the exception of routinely scheduled national examinations, these students receive little or no experience in taking standardized examinations. This becomes apparent when discrepancies are observed between the scores of a teacher-made test and those of a standardized test covering the same material.

Generally, the research in this area has postulated that at least two variables can be measured independently as related to test-taking skills (Paulman & Kennelly, 1984). Both test-anxiety and test-taking skills may independently influence cognitive problem solving in the evaluative setting. Specifically, the possession of good exam-taking skills serve to compensate for anxiety-induced declines in processing information.

During the past three decades, concepts of test-anxiety have moved from drive-oriented to those emphasizing skills deficits (Cutler & Holahan, 1980; Kirkland & Hollandsworth, 1979). This transition is significant since this approach holds that a deficit in adequate study habits and/or exam-taking skills, and not anxiety, is central to the impaired performance of test-anxious students.

Study habits of text-anxious students are often poor (Cutler & Holahan, 1980; Desiderato & Koskinen, 1969; Kirkland & Hollandsworth, 1979). Moreover, anxiety-reduction seldom improves performance on cognitive tasks, classroom tests or grade-point averages (Kirkland & Hollandsworth, 1979). It has also been found that exam-taking skills possessed by students represent organizational strategies which should assist in appropriate focusing of attention. Further, it has been reported by Paulman and Kennelly (1984) that both high and low anxious students with good exam skills will outperform poorly skilled, equally anxious peers. Thus, high anxiety and poor exam skills seem to combine in producing the most detrimental primary-task performance; whereas, good exam skills apparently serve to facilitate high-anxious students coping with the evaluative situation.

Purpose and Rationale

In view of current arguments on test skills and performance rate of minority students, it is useful to determine the effects of suggested applications on the students who fit into this category. Once this current baseline has been obtained, the impact of future developments may be assessed. To assure homogeneity of educational background this study included only minority students from two rural school districts in Alabama. The researchers acknowledge the potential contributions of other rural and urban school districts.

This study collected data on cognitive interference, test anxiety and effective study skills that might serve as indicators for improving the overall test performance of minority students. Attitudes of high school counselors were also assesed as a part of this study.

Method

Subjects

The study involved the collection of data from students and counselors in public senior high schools in Russell and Macon Counties, located in the Black Belt region of the state of Alabama. Both counties were rural, relatively financially depressed, and had large black populations. All schools represented in the study had a minimum of one counselor for grades 9-12. Each school participated in the Upward Bound Program at Tuskegee Institute, located in Macon County. The Upward Bound Program Director arranged for the participation of students in grades 11 and 12.

Thirty-three students consisting of eleven 11th-grade females; five 11th-grade males; twelve 12th-grade females, and five 12th-grade males were selected to participate in the study. This group made up the entire class of 11th and 12th grade students attending the Upward Bound Program. All students responded to the pre-test and post-test administered to assess test-taking skills.

One counselor was interviewed for each of the schools represented to determine attitudes toward test-taking skills. Interview data were obtained from seven counselors.

Instruments

Brown's (1975) Effective Study Test (EST) is composed of five scales assessing skills related to academic performance. The Exam Behavior subscale was selected as the appropriate scale for measuring study skills for this research. Kirkland and Hollandsworth (1979) have shown this 25-item scale to be a better predictor of grade point averages and ACT scores than any of the other EST scales or the total score. The relationship between test-taking knowledge and academic achievement was the basis for use of this subscale.

Sarason's (1972) Test Anxiety Scale (TAS) is a 37-item true-false instrument that measures the level of anxiety as related to a specific test situation. This instrument is reported to correlate highly with other scales that measure test anxiety (Kirkland & Hollandsworth, 1979).

The Cognitive Interference Questionnaire (CIQ); Sarason (1980) is an 11-item scale designed to evaluate, on a five-point scale, the degree of task-irrelevant thoughts experienced during problem-solving situations. Items on this instrument are indicative of the intervening and disruptive thoughts experienced during test situations. The CIQ has the potential for differentiating the cognitive processes of test-anxious students in test settings.

A 25-item questionnaire was developed by Blanding and Dees (1984) to assess the attitudes of counselors toward the test-taking behavior of students at their schools. The first author administered the instrument to counselors in each school during mid-April.

Procedure

Data collection began with visits to counselors at each of the senior high schools identified for the study. Counselors were given one hour to review the instrument and respond to questions. A private room had been provided as a result of earlier contacts with the schools. This approach maximized the return of instruments.

Participants in the study were exposed to ten group meetings over a five-week period. The first session was devoted to orientation to the project, and administration of the pre-test. Two sessions were prepared for each of the following skill-building areas: communication skills, grammar and punctuation, reading and vocabulary skills, logic and quantitative skills, and test-taking strategies. The last session was devoted to the administration of the post-test and internal evaluation. An instructor was retained for each of the areas of specialty. These courses were designed to develop and provide a basis for measuring analytical and problem-solving techniques required for cognitive task performance.

Results

Means and standard deviations were computed for all groups by grade and sex; t-values were then computed for the TAS, CIQ, and EST. Frequency and percentage distributions were obtained for counselor responses. The results are reported separately for each of the instruments.

Text-Anxiety Scale (TAS)

Thirty-three students completed the pre-test and post-test for this scale. A mean score of 17.45 was reported for 11th grade females, with a standard deviation of 7.18. The mean score reported for 11th grade males was 20.6, and the standard deviation was 7.73. The mean score was 22.5 for 12th grade females, and the standard deviation was 5.6. The mean score for males in this group was 21.00, and the standard deviation was 3.80.

Contrary to expectations, the numerical value of the TAS post-test was lower than the pre-test in all instances, thus, reflecting higher levels of anxiety. Although the anxiety level increased, there was a decrease in the scores reported for the CIQ. The EST scores showed no significant difference.

The t-value reported for the TAS was 3.57, with 32 degrees of freedom. The level of significance was .05.

The mean scores and standard deviations are reported by grade and sex in Table 1. The t-value is

reported in Table 2.

Table 1
Mean Test Scores by Grade and Sex

		CIQ	EST	TAS	CIQ_2	EST_2	TAS_2
11th Grade Females							
N=11	X	30.36	23.18	17.45	27.6	23.6	16.1
		13.7	1.32	7.18	12.1	1.12	6.12
11th Grade Males							
N=5	X	26.8	22.4	20.6	23.6	23.0	17.2
		9.9	2.30	7 73	9.6	1.87	7.12
12th Grade Females							
N=12	X	35.6	23.3	22.5	[illegible]3	23.9	18.4
		8.9	1.07	5.6	7.17	.66	5.7
12th Grade Males							
N=5	X	30.0	23.0	21.0	22.6	24.2	16.6
		3.46	1.22	3.80	6.4	.84	6.9

Effective Study Test (EST)

There was no significant change in student performance on the EST for grade or sex. The mean score for 11th grade females was 23.18 on the pre-test, and 23.6 on the post-test. The same holds for males in this group. The mean score on the pre-test was 22.4, and 23.0 on the post-test. A similar distribution was computed for 12-th grade students, showing little change in behavior. The pre-test mean score reported for females was 23.3, with a standard deviation of 1.07. The difference between male and female scores in this group did not vary significantly. Male mean scores were 23.0 on the pre-test. Female scores on the post-test did not vary significantly from the pre-test. The mean post-test was 23.9, and the standard deviation was .66. The mean score for males was 24.2 on the post-test, with a standard deviation of .84. Means and standard deviations are reported for this instrument in Table 1 and t-values are reported in Table 2. When compared to percentile norms for high school seniors and juniors, participants scored in the 99th percentile, where a score range of 23-35 reflects superior examination behavior.

Cognitive Interference Questionnaire (CIQ)

Results from this scale show a reduction in the level of self-rumination associated with task performance for grade and gender. The mean score reported for 11th-grade females on the pre-test was 30.36, with a standard deviation of 13.7. The post-test mean was 27.6, and the standard deviation 1.12. Eleventh grade males reported a mean score of 26.8, with a standard deviation of 9.9 on the pre-test. The mean score reported for males on the post-test was 23.6, with a standard deviation of 9.6.

Table 2
T-Test Scores for Test-Taking Skills

Variable	# Cases	Mean	Standard Deviation	t-value	Degrees of Freedom	Level of Significance
TAS	33	20.39	6.34	3.57	32	.05
TAS_2	33	17.18	6.03			
CIQ	33	31.39	10.49	4.3	32	.05
CIQ_2	33	26.87	9.34			
EST	33	23.09	1.37	2.02	32	.05
EST_2	33	3.88	1.13			

Similar changes were noted for 12th-grade respondents. The before and after mean score for 12th-grade females was 35.6 and 29.3 respectively. For males in this group, the scores were 30.0 and 22.6, respectively.

The means and standard deviations are reported for this instrument in Table 1. The t-value is reported in Table 2.

Counselor Attitudes Toward Test Performance of High School Students in Alabama

Questionnaires were administered to counselors for each of the schools represented by students in the study. The results indicate support for courses in the test-taking skills, and that a need existed for such courses. All respondents indicated that test-taking and/or study skills had been attempted in their schools within the last year, and all respondents felt their students performed poorly on standardized tests. As expected, a smaller representation of 57% of the respondents felt their students performed poorly on teacher-made exams. More than 70% of the respondents felt their students experienced high levels of anxiety on both standardized and teacher-made examinations. Eighty-six percent of the counselors felt that a program in test-taking should be offered in their schools. Seventy-one percent felt that students would willingly participate in test-taking courses. Other results from the questionnaire are shown in Table 3.

Discussion

These findings suggest that test anxiety may be measured independently of examination behavior and cognitive interference. It would appear that anxiety level rises with high expectations in problem-

Table 3
Percentage Distribution of Counselor Responses

	% Agree	% Disagree
1. School has attempted test-taking skills	100	
2. More than 25% low standardized test scores	100	
3. More than 25% low teacher-made test scores	57.14	28.57
4. Schools that discuss test-taking problems	85.72	14.29
5. Perceived high anxiety on teacher-made tests	85.72	14.29
6. Perceived high anxiety on standardized tests	71.43	28.57
7. College bound students in upper 3rd of class	100	
8. 25% of students in test-taking skills	100	
9. Majority of students pursue college program		100
10. Test-taking skills should be offered	85.72	
11. School offers test-taking skills	42.86	57.14
12. School curriculum has college-prep courses	42.86	57.14
13. School conducted test-taking seminars, etc.	57.14	28.57
14. Students do well on standardized tests	16.67	83.34
15. Counselor initiated test-taking activity	71.43	14.29
16. Students request test-taking assistance	71.43	28.57
17. Counselors would support test-taking program	100	
18. Counselor would support non-structured course	85.72	14.29
19. Perceived voluntary student participation	71.43	14.29
20. Perceived ability to teach test-taking skills	100	
21. Counselor attended test-taking program	57.14	42.86
22. Perceived parental support for program	57.14	
23. Parents invited to discuss student performance	71.43	28.57
24. Students invited to discuss performance	100	
25. Students make career decision by 11th grade	57.14	28.57

solving situations, and that examination skills and control of cognitive interference do not reduce the anxiety experienced in evaluative settings. An important finding in this study was that the anxiety level did not change significantly in relation to the results of the other instruments.

The short-term applications employed in this study may not have been sufficient to produce noticeable changes in examination behavior. A more meaningful measure would probably result from longer treatments and a control group as a part of the research design. The question of "teacher preparation and classroom facility" is also an appropriate concern, and must, at some point, be explored to determine the effect of this important variable on test performance of students.

The instruments selected were adequate scales for this study, and have been used extensively in research on test-taking skills (Paulman & Kennelly, 1982; Brower & Mueller, 1978; Counts, Hollandsworth & Alcorn, 1978; Galassi, Frierson & Sharer, 1981). Still, it is strongly believed that adequate treatments must be implemented to generate significant findings.

This study addressed test-taking skills of minority high school students matriculating through two rural school systems in Alabama. For the purpose of this study, test-taking skills included measurements for cognitive interference, test anxiety and examination behavior. Three short courses were taught in areas that the researchers felt would assist in identifying problems directly associated with test-taking skills. Overall, the courses were designed to aid the student in improving critical reading, listening and comprehension, as well as problem-solving and analytical skills. Development of these

abilities were intended to enable the student in the improvement of performance on both teacher-made and standardized examinations. The project emphasized the development of test-taking skills as a strategy for improving cognitive task performance of minority students.

The data reported here largely reflect the measurements for three short-term procedures in test-taking skills, and should not be generalized beyond the population studied.

The most striking findings of this study were results of the CIQ and TAS. After exposure to courses, the level of interference was reduced. Thus, students may have acquired some knowledge of how to concentrate or "tune-out" irrelevant thoughts required for analytical problem solving. Although this information was promising, the measurement for anxiety was reported after the courses were implemented.

As in Paulman and Kennelly, these researchers believed that anxiety could be measured as an independent variable. It would appear that this variable increased for both sex and grade. To be sure, there was no relationship between anxiety and cognitive interference; whereas, there may very well be a relationship between anxiety and examination behavior as measured by the EST. There were no significant differences reported between the pre-test and post-test for grade or sex.

Other results were reported for counselors associated with each of the schools represented. Generally, they felt their students performed worse on standardized exams than on teacher-made exams, and that there was a need for courses to develop these skills in the high schools. Another positive finding was that counselors expressed support for structured and non-structured courses at their schools. Further, counselors reported that students would willingly participate in these courses.

After interpreting the data from this study, the researchers conclude that problems do indeed exist for minority students on tasks involving cognitive performance, and that formal strategies seem a practical approach to addressing this issue. While this strategy seems applicable, the length and intensity of the courses must be increased to effect maximum development of skills.

Finally, Wilbur (1982) has reported that the most efficient way to improve test articulation between institutions of higher education and high schools, is to get high school teachers and university professors working together on mutual interests. The current review of literature supports the need for articulation of test-taking skills between post-secondary education and the public schools. This approach seems particularly relevant for rural high schools.

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Appendix

Counselor Responses to Study Skills Questionnaire

N=7 Item	% Strongly Agree	% Agree	% Uncertain	% Strongly Disagree	% Disagree
1. Within the last year, my school has employed test-taking and/or study skills to improve performance of students who score low on examinations.	28.57	71.43	0	0	0
2. More than 25% of the students at my school perform poorly on standardized tests.	57.14	42.86	0	0	0
3. More than 25% of the students at my school perform poorly on teacher-made tests.	0	57.14	14.9	28.57	0
4. The principal, teacher, and counselors discuss problems associated with test performance at my school.	14.29	71.43	0	14.20	0
5. A large number of students at my school experience high levels of anxiety before taking teacher-made examinations.	14.29	71.43	0	0	0
6. A large number of students at my school experience high levels of anxiety before taking standardized examinations.	14.29	57.14	0	28.57	0
7. The college bound students at my school in grades 11 and 12 tend to rank in the upper third of their class.	0	100	0	0	0
8. At least 25% of the students at my school participate in a test-taking or study skills program.	0	0	0	71.43	28.57
9. A majority of the students in my school pursue a college preparatory curriculum.	0	0	0	71.43	28.57
10. A summer program in test-taking skills should be offered to students at my school.	14.29	71.43	14.29	0	0
11. My school offers a program in test-taking and/or study skills.	14.29	28.57	0	57.14	0
12. My school offers a curriculum that allows election of advanced or college preparatory courses.	28.57	14.29	0	42.86	14.29
13. My school has conducted a class, seminar, or workshop on study or test-taking skills.	0	57.14	14.29	28.57	0
14. Generally, students at my school do well on standardized tests.	0	16.67	0	66.67	16.67
15. I have personally initiated activities designed to address test performance of students at my school.	14.29	57.14	0	14.29	14.29
16. Students come to me for assistance with test-taking and/or study skills.	0	71.43	0	28.57	0
17. Counselors at my school would support a structured activity in test-taking and/or study skills.	42.86	57.14	0	0	0
18. Counselors at my school would support a non-structured acitivity in test-taking and/or study skills.	14.29	71.43	0	14.29	0
19. Students at my school would participate willingly in test-taking and/or study skills	14.29	85.71	0	0	0
20. I am qualified to facilitate, teach a course, seminar, or conduct a workshop on test-taking or study skills.	14.29	85.71	0	0	0
21. I have attended at least one class, workshop, or seminar on test-taking or study skills within the last year.	0	57.14	0	42.86	0
22. Parents in this community would be receptive to test-taking and/or study skills as a part of the school's regular academic program.	0	57.14	42.86	0	0
23. Parents are invited in for conferences to discuss the academic performance of their children at least once per semester.	28.57	42.86	0	28.57	0
24. Students are invited in for conferences to discuss their academic performance at least once per semester.	28.57	71.43	0	0	0
25. Students at my school who plan to attend college make the decision to do so before their junior year.	0	57.14	14.29	28.57	0

A Comparative Analysis of Test-Taking Skills and Content-Based Instruction Upon SAT Test Scores

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The consensus seems to be and has been for some time that blacks do not score high on standardized tests. Several reasons have been offered. Christopher S. Jencks (cited in Anosike, 1975, p. 435) and his team of seven other scholars stated in their 1972 "Jencks Harvard Study" that "no amount of bigger school budget, curricular improvements, quality teachers, preschool programs, compensatory tutoring, or desegregation would have any appreciable effect on (raising) either the test scores or educational attainment" of minority or disadvantaged school children. According to Anosike (1975), what Jencks and his associates were implying is that performance and/or achievement are based on heredity, i.e., on the genetic characteristics that children inherit at birth. He stated further that this is something completely opposite of the historical understanding.

Cazden (cited in Longstreth, 1978) posited with the "different language" hypothesis that "all children acquire language but that many children, especially lower-class black children, acquire a dialect of English so different in structural (grammatical) features that communication in school, both oral and written, is seriously impaired by that factor alone." Longstreth (1978) concluded from this hypothesis that blacks and other students with similar backgrounds have more difficulty comprehending and producing material presented to them in standard English. Cummings (1977) stated that among the many theories and hypotheses advanced to account for scholastic performance among black youngsters is the notion that variations in the quality of family life strangely influence a black child's school performance.

Unfortunately, the aforementioned information implies that most blacks are at a disadvantage in cases where test performance is the sole criterion for providing equality in employment, promotions, etc. Nevertheless, a more positive view was mentioned by Scheuneman (1979). He stated that in the past few years the issue of test bias with its far-reaching political and social implications has been the subject of much controversy. The majority of the research on social bias has been concerned with the fair use of testing instruments in decision-making situations such as employment and college admission. In general, the models employed in these situations have involved the test or subtest as a whole and have measured test scores against some criterion of performance external to the test.

Institutions at all levels tend to view students' performance on standardized tests as a necessary prerequisite in predicting success at any level. Test scores seem to have a major role to play in educational placement, admission to academic programs, promotions, etc. Because this use of standardized tests and the tendency for blacks, as a group, to score below the national average on the Scholastic Aptitude Test (SAT), the current investigation assessed the impact of enhancement of test-taking skills and ACT content-based instruction upon black students' performance on the SAT.

Method

Subjects

A random selection of 125 black students enrolled at a Black Belt high school was chosen to participate in the study. They were classified as juniors and tended to come from economically deprived areas. None of the students had taken the ACT or SAT before.

Instruments

The Scholastic Aptitude Test was used as the principle measuring tool. Its reliability and validity have been established by the Educational Testing Service, Princeton, New Jersey.

Procedure

After selection of the subjects, they were randomly assigned to one of three groups, content-based instruction, testing skills strategies, and content-based instruction plus testing skills strategies. Subjects in Group 1 (content-based instruction) were exposed to six 90-minute sessions

which addressed the content of the SAT. Group 2 (test-taking skills) received six 90-minute sessions on test-taking skills and Group 3 (content plus test-taking skills) attended both sessions. Thus, subjects in this group were exposed to twelve 90-minute sessions. It should be noted that subjects in this group attended the content and test-taking skills sessions on the same day.

Prior to commencement of the session, all subjects took the SAT to determine their composite performance before attending any of the sessions. The SAT was re-administered in a group setting after the last session to determine changes in the SAT composite score.

All 90-minute sessions were taught by individuals who had high levels of expertise in test-taking skills strategies and/or SAT content. These persons were teachers by academic preparation.

After completion of the post-administration of the SAT, all tests were scored and an analysis of covariance was used to assess significant differences. With this procedure, performance on the pre-test was controlled. The Scheffe Test was used to assess differences between individual means.

Results and Discussion

Based on the analysis, significant differences existed among the groups, $F(2, 90) = 3.83$, $p < .05$. Further analysis with the Scheffe Test suggested that Groups 2 and 3 did better on the post-SAT than Group 1 while Group 3 displayed a larger mean than Group 2. An analysis of the gain scores indicated that Group 1 gained 11 points on the SAT, Group 2 gained 59 points, and Group 3 displayed a gain of 96 points. Thus, the largest gain was associated with exposure to both content-based instruction (SAT) and test-taking skills.

Given the gains for Groups 1 and 3 and the significant differences that emerged, the present approach appears to be viable for enhancing blacks' performance on the SAT. This enhancement is predicated upon improving black students' test-taking skills while exposing them to related test items.

The challenge has always been to educate so that each individual could realize his/her own potential. While the goal has not changed, new paths to its attainment are needed. With the national regression of civil rights that we observe and the increased emphasis upon science and math, black students must perform more competitively on the SAT, ACT, and similar admission tests if they are to acquire equal access to collegiate instruction. Also, they must enhance their performance on teacher certification exams if sociological balances are to be maintained in K-12 classrooms.

Proponents of the "different language" hypothesis, genetic inferiority, and socio-economic deprivation would argue that poorer performance of blacks on the SAT and ACT is a given. No type of intervention program can make a difference. Clearly, the current findings have questioned this assumption. Although economic deprivation is not without effect, black students can still be educated to effectively respond to the challenges of a technological society. For this to happen, though, school systems must implement sound intervention programs. The current study represents a possible approach.

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Improving Analytical Skills of Minority High School Students: Implications for Test-Taking

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There is wide-spread agreement among educators that the development and improvement of skills necessary for abstract and critical thinking should be a high priority goal for most educational programs. Recent studies by such task forces as the National Commission on Excellence in Education (1983), the Task Force on Education for Economic Growth (1983), and the National Science Board (1983) have all called for greater emphasis on the higher order thinking skills. There is less than unanimity of opinion, however, regarding the feasibility of attempting to formally teach such thinking skills. Too, even among those who feel that it is possible to formally teach thinking skills, there is less than total agreement as to which skills should be taught and the relationships, if any, among such skills.

Among areas of disagreement regarding a formal structure for the teaching of strategies designed to improve thinking is whether or not these skills should be taught didactically or indirectly deduced through specific methods employed in teaching other subjects. Edward de Bono (1983), a leading authority in the area of critical thinking, states,

> . . . I believe that we should have a specific place in the curriculum that is set aside for the teaching of thinking skills. This formal recognition is essential so that pupils, teachers, and parents all recognize that thinking skills are being taught directly. In time, I would certainly hope that the skills taught in the "thinking lessons" would find their ways into such subject areas as geography, history, social studies, and science. However, the first step is to establish "thinking" as a subject in its own right (pp. 705-706).

According to Palmer (1984), however, most school districts which have directly addressed the issue have chosen to systematically infuse the skills into all subjects of the curriculum as opposed to the use of a didactic approach. An example is the Houston Independent School District. In the fall of 1983, the school system implemented the recommendation for "a review and revision of curriculum, infusing higher level thinking skills throughout" as made by its Task Force on Promotion and Graduation Requirements (Houston Independent School District, Note 1, p. 5). An exception to this trend, however, is the Totowa, New Jersey School District which, according to Palmer (1984), has chosen to teach reasoning as a separate skill.

Many educators who would oppose attempts to formally structure courses which would enhance the development of thinking skills would probably hold that such skills are inborn and largely uninfluenced by practice or training. There is a small but growing data base, however, which would tend to refute this view. While it may be true that no one is able to teach another person to think, "one can teach people to improve the thinking skills they already have, to identify valid thought patterns and to detect errors in reasoning" (Hartman-Haas, 1981, p. 10). As early as 1941, Glaser demonstrated that instruction in critical thinking improved such skills.

More recent studies tend to support the earlier findings of Glaser. Whimbey and Whimbey (1976) document studies which have had a positive influence on IQ. Lawson et al. (1975, p. 124) concluded that "if one intends to promote reading and language ability, one must first provide situations which optimize the development of the learner's ability to think."

Edward de Bono (1983), in describing a program which he has developed for the purpose of the direct teaching of thinking as a skill, claims that school systems and major corporations throughout Europe, the United States, and Canada have documented significant differences in the level of achievement for those who have been taught thinking directly. He further cites evidence that the direct teaching of thinking resulted in an improvement of the behavior of delinquent students in a special school. Whimbey and Whimbey (1976) cite work in Project SOAR at Xavier University in New Orleans as an example of the mounting body of research supporting the ideas that thinking strategies

can be taught. They stated that five weeks of intensive training in thinking strategies resulted in a mean increase of 115 points on the SAT for Xavier students. Worsham and Austin (1983) report findings similar to those of Whimbey and Whimbey. They stated that underachieving students who received instruction in thinking strategies for about 100 hours increased their SAT scores by an average of 42 points. Sandra Black (Note 2), noted consultant in the field, has found that direct teaching of strategies is highly positively related to an increase in student performance on many standardized achievement tests including CAT, SAT, etc. Various other researchers have found the teaching of thinking skills to be highly related to increased achievement in a variety of subject areas (Martin & Blan, 1981; Schneider & Renner, 1976; Collea et al., 1975).

While this research has not yet resulted in explicit methodologies for classroom instruction, it has produced sufficient evidence to support continued efforts in developing ways to stimulate these skills. While we as researchers are not yet able to develop an exhaustive listing, in hierarchial form, of skills which are necessary to improve thinking, there is enough evidence to merit structuring formal courses in these skills.

In fact, the movement toward an emphasis on "critical thinking" has already resulted in the institution of a graduation requirement in critical thinking for the massive 19 campus California State University System and the California Community College System (Paul, Note 3) among numerous others.

Statement of the Problem

In articles published in numerous daily and weekly newspapers, it was reported that students in rural Black Belt school districts ranked among the lowest in the State of Alabama on the Alabama High School Graduation Examination (AHSGE). Annual reports from the State Department of Education of Alabama indicated that these districts ranked among the lowest on the California Achievement Test (CAT).

Previously cited research has provided much evidence that many sources of variance in standardized test scores are totally independent of the examinees' knowledge of the subject matter. Rather, test scores are dependent upon the students' ability to utilize logical and critical thinking skills. Since it appears that such sources tend to attenuate the scores of blacks and minorities, particularly those of rural backgrounds, it was apparent that efforts should be made to meet the challenges imposed upon the students by standardized tests. Thus, there appeared to be a need to assist the rural school systems of Alabama in incorporating test-taking and critical thinking skills in their curricula. Given this need, the current study tested the impact of an innovative program upon black students' analytical skills.

Method

Subjects

Thirty black students who attended the same rural public high school in the Black Belt of Alabama participated in the current study. Their grade placements ranged from 9 through 12, although only 20% of them were ninth graders while 11th and 12th graders each comprised 40% of the sample. Sixty-three percent (N=19) of the subjects were male while 37% (N=11) were female. All students tended to come from families with low socio-economic status.

Instruments

Selected portions of the Midwest Thinking Skills material were used for instructional purposes (Baker, 1984; Black & Black, 1984; Harnadek, 1976, 1977, 1978, 1979, 1980; and Whimbey & Lockhead, 1980). Because of problems in the implementation of the project, the amount of time on task did not merit the use of standardized achievement tests as measures of changes in student achievement. This was because the period was too short for any measurable changes to occur in most academic subject areas. However, the Whimbey Analytical Skills Inventory (WASI) was used to measure changes in abilities relative to specific skills taught in the project. This inventory has not been standardized but Whimbey (personal communication) stated that it can be used for the above purpose.

Procedures

Using a one group pre-test post-test design, the WASI (split half) was administered to 30 students. These students had been selected by the local school administrators and they represented students whose analytical abilities were the weakest. The criterion for selection was "these students need it the most." After selection of the subjects and administration of the pre-test, 11 sessions were held with the students including an orientation session and a final session in which post-testing was done. The sessions lasted for approximately one hour each and covered the following topics:

a. Verbal analogies
b. Figural and mathematical analogies
c. Logic - Syllogisms
   Using *and*, *or* and *not* statements (conjunctions, disjunctions, and negations)
d. Logic - Syllogisms
   Using *if . . . then* and *if and only if* statements (conditionals and bi-conditionals)
e. Logic - Syllogisms - Combinations
f. Verbal reasoning problems

g. Verbal and mathematical reasoning problems
h. Mathematical reasoning problems

All sessions were conducted by the researcher, an educational psychologist with 27 years of teaching experience ranging from grades 6 to 16. After the final session, the WASI (split half) -b was administered as a post-test. Gain scores were computed and the t-test was used to determine if the gain was significant at the .05 level of significance.

Table 1
Means and Standard Deviations for Pre- and Post-Test Scores

	Mean	S.D.	N
Pre-test	5.60	2.44	30
Post-test	9.67	5.89	18

$t(46) = 3.26$
$p < .0001$

Results and Discussion

In Table 1 are the pre- and post-test means for students who completed the Whimbey Skills Inventory. Several students did not show up for the last session so post-test scores are not available for them. This resulted in a decrease from 30 students for the pre-test to 18 for the post-test. Also, at least two students were compelled by school administrators to attend the final session and complete the post-test. Their score on the post-test was 0 so they were dropped from the study. When a comparison was made between pre- and post-test scores, a significant difference emerged, $t(46) = 3.26$, $p < .0001$. The group displayed a significantly higher post-term mean score on the Whimbey Skills Inventory (Form B). Table 1 illustrates this increase. Thus, the approach that was used in the current project tended to significantly increase black high school students' logical and critical thinking skills.

Whimbey and Whimbey (1976) noted that five weeks of intensive training in thinking strategies resulted in a mean increase of 115 points on the SAT for Xavier University students. Given the observed increase in analytical skills for students in the current study and the findings of Whimbey and Whimbey (1976), it would appear that the current approach represents an effective mechanism for increasing black high school students' performance on the SAT, ACT, and other standardized tests. Unfortunately, we must wait for a follow-up study before confirming this. If such a confirmation occurs (the students scored well on the ACT), the current program should be implemented on a broad scale throughout the Black Belt.

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Effect of an Innovative Program Upon Tenth Graders' Reading Achievement

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In his article, "Towards a Realistic Rationale for Teaching Reading in Secondary School," Palmer (1978) states that the idea of having systematic study of reading on the high school level is relatively new to American education. The ratio of reading teachers to high school students appears to be one teacher to several thousand students. Yet, the issue of providing reading instruction beyond the elementary grades is getting more and more attention. One reason that is commonly given is reading skills are necessary for (a) success in employment, (b) personal improvement and growth, (c) more effective participation in society, and (d) a richer and more fulfilling personal life. Palmer (1978) expanded this rationale to include the following:

1. Print is dominant in the secondary school curriculum and its prevailing use is not likely to diminish in the years to come.

2. Textbooks too difficult for many students to comprehend serve as the principal source of school learning.

3. Reading facilitates and reinforces other factors involved in learning.

4. Reading is a unique mode of learning possessing "code and channel" characteristics that preserve and convey information differently than other learning modes.

At the turn of the century, one of 10 eighth-grade graduates went on to high school. Today more than 90% of these graduates attend secondary school. Compulsory attendance laws and the value of a high-school diploma in our society have swelled the number of high-school students. Now it has become quite evident that many of these students are unable to read, write, or spell on their grade level. Indeed, many are several grades lower in their achievement scores. This means that subject matter teachers must give instruction in their specialized vocabularies, make sure that students can ferret out meanings in sentences, and assist their students through the other reading complexities of their discipline. Achievement of this objective (the teaching of reading by non-reading instructors) is not easy because Shuman (1978) note that many teachers snub the idea of teaching reading. They remark, "I am a history (mathematics, science, etc.) teacher, not a reading teacher." To resolve the problem, principals can and must serve a vital role in the reading process. They can (a) encourage teachers to incorporate some reading instruction in every subject matter lesson, (b) encourage close cooperation between the teacher, librarian, and guidance counselor, (c) enlist the aid of a reading specialist, and (d) arrange for inservice sessions on reading in content areas.

Other strategies for the teaching of reading by non-reading instructors include the use of magazines and paperback novels (Nist, Kirby, & Ritter, 1983) comic books (Swain, 1978), a reader's theater class (Tashlik, 1978), and physical activity in relation to the assignment (Bachner, 1974). The use of magazines is strongly suggested because they have a wide variety of articles with student appeal—current events, controversial issues, and material pertaining to subject matter areas. *Time*, *Ebony*, *Jet*, and *Newsweek* are good examples. In using magazines, self-selection is important, either group consensus or individual choice. The teacher should assign specific articles, yet allow students to select an additional article of interest to them. In this way, students can begin to understand the difference in reading something of interest to them versus something which they find of little interest.

The question might well be raised as to whether or not comic books can be used to teach reading. Swain (1978) conducted a study in this connection and discovered that most of the students who made good grades read comic books. Comic books have a greater appeal to younger students and comic strips to older students. Her data suggested that comic books/strips in reading and language arts classes may be an effective strategy. Most students like to read them, they are educational, and they do not discourage other reading. Any number of activities can be developed from these books and strips. All that a teacher needs to do is make a list of the skills to be developed and proceed. One thing must be kept in mind: Make sure the exercises focus on the words, not the pictures. Otherwise, poorer readers will spend their time on non-reading aspects of the activity.

Given the depressed reading achievement scores

of students from the Black Belt of Alabama, the purpose of the current study was to investigate the effect of an innovative program upon reading achievement. It was hypothesized that significant gains in reading would result from exposure to the program.

Method

Subjects

Two sections of tenth grade students (N=45) enrolled in basic English classes at a Black Belt high school were used in the study. These sections were taught by the same instructor and the students had similar academic levels. Twenty-three students were in the experimental group and 22 were in the control group.

Instruments

The advanced two subtests, Forms JS and KS, of the Metropolitan Achievement Test were used to measure reading comprehension. In addition, a reading workbook, *Developing Power in Reading*, by Roe & Ross (1976) was used. The reading workbook represented the core of the reading intervention program. Other material included current magazines, e. g., *Jet*, *Ebony*, *Newsweek*, *Time*, etc., and teacher-made handouts.

Procedure

After the English instructor designated one of her basic English classes as the control group and the other class as the experimental group, Form JS of the Metropolitan Achievement Tests—Reading Survey Tests—Advanced 2 was administered to both classes. Following this assessment, the teacher utilized the same instructional methods with the control group that were employed previously. The experimental group, however, had direct instruction in reading and had the opportunity to apply the skills in their basic English class.

The instructor evaluated the objectives that must be mastered as mandated by the State Department of Education and the reading skills that must be used to master successfully the objectives. Thus, a plan was designed to integrate the teaching of reading with the teaching of basic English. The objectives that were set forth for reading are as follows:

Given the graded passage and questions based on the passage, the pupil can correctly answer:

1. a question based on a passage vocabulary word;
2. a question requiring literal comprehension of specific passage details;
3. a question requiring literal comprehension of global passage information;
4. a question requiring inferential comprehension of specific passage details;
5. a question requiring inferential comprehension of global passage information; and
6. a question requiring evaluation of passage information.

To aid in the mastery of these objectives, the students were provided with a reading workbook. The students had in-class assignments as well as out-of-class activities. In addition to these assignments, the students utilized current periodical literature such as *Jet*, *Ebony*, *Newsweek*, *Time*, mail-order catalogs, etc. These materials reinforced the skills introduced in the workbook and provided the students with an opportunity to apply the skills. The students in the experimental group received special assistance from the guidance counselor, who provided individual and/or group counseling with students in order to:

1. evaluate each student's aptitude;
2. introduce students to various occupational choice;
3. aid students in setting educational and career goals;
4. ascertain any factors that may be inhibiting a student's academic achievement;
5. suggest alternative activities to enhance a student's strengths, and
6. strengthen recognized student weaknesses.

Each student had at least a one-hour session with the counselor, and additional time was provided for students who demonstrated a need for more counseling.

Two school administrators, the principal and the vocational counselor, administered a survey to the experimental and control groups to assess the effectiveness of the classes. A very important aspect of the study was the working meetings with the English instructor and the reading professor. These meetings were designed to discuss the skills, methods, and materials to be utilized in the study. The first meeting was one to establish rapport between the English instructor and the reading professor, to select the classes to be used in the study, to informally assess the needs of the students, to select a pre- and post-assessment instrument, to establish a time frame for the study, and to establish a plan for integrating the teaching of reading skills in the experimental group's class.

Several concerns were addressed during the first meeting. A major concern of the English teacher was how she would teach the objectives delineated for the course by the State Department of Education if she taught reading skills. The instructor discussed these objectives and the reading professor discussed the reading skills which were important at this level. As the discussion ensued, it became apparent that the reading skills could enhance the students' English

skills and that they were quite relevant. In some cases such as the main idea and the thesis sentence, the skills were essentially the same. Another concern expressed was the length of time that was designated for the study. Because the time frame (20 hours) initially designated was too short, the time was changed to February 13, 1984, through April 27, 1984. Only one instructor was used in the study, thus eliminating the teacher variable. The teacher was to decide which of her classes were to be used in the study. Factors which were considered in choosing the experimental and control groups were the similarity of the academic ability of the students, the number of students in the classes, and the time of class meetings. The next step was reviewing several tests prior to deciding upon the instrument to be used for pre- and post-assessment. Reading skills to be taught during the experiment and materials were also selected. The skills which were determined to be of primary importance for tenth grade students were found in *Developing Power in Reading* by Roe and Ross (1976). Therefore, it was decided that this book would be used as the primary resource for teaching the reading skills. During this meeting and subsequent meetings, other resource materials were selected, and teaching techniques to be used with the experimental group were discussed. The English teacher was frequently reminded not to teach the reading skills to the control group. The reading professor suggested that the experimental class be grouped; however, grouping was already in practice. The grouping method consisted of five persons, two of whom were good students.

After the experimental group completed the reading intervention program, Form KS of the Metropolitan Achievement Tests was used to conduct post-assessment of the reading skills for the control and experimental groups.

Results and Discussion

Of the students who took the pre- and post-test, 17 were in the experimental group and 19 were in the control group. A comparison of the pre- and post-test scores indicated that subjects in the experimental group gained an average of 5.8 points while those in the control group actually showed a decrease of 0.68. Relative to grade levels, the experimental group gained 1.9 grade levels while the control group only gained two months. The same was true for percentile rank. Experimental subjects increased their percentile rank by ten points while control subjects' percentile rank remained unchanged.

Using the t-test, it was found that the gain from pre- to post-test was significantly greater for the experimental group, $t(34) = -3.38$, $p < .01$, than the control group. Thus, the reading intervention program appeared to significantly affect tenth graders reading achievement. Notwithstanding this significant finding, a note of caution must be registered. The fact that the teacher and the students were aware of the experiment could have exposed the study to the halo effect or resulted in the teacher unconsciously influencing the results to insure the desired effect.

Report of Activities Involving Guidance

Guidance and counseling were an integral part of the research project. Student participation in interview sessions and in occasional informal settings stimulated a great deal of interest in regard to curriculum planning to include the innovations and creativity used as a component of the project.

The primary concern of the guidance component was to determine the short- and long-range benefits of the program, to evaluate the relationship of counseling and guidance to the classroom, and to assess the linkage that existed between the two.

On two consecutive days, students were interviewed. Key questions were entertained by each student. The concerns were thought-provoking and yielded very sound reflections of the average tenth-grade student. Students were asked the following questions or to do the following things:

1. Make a comparison of this research project to your regular English class.
2. Are the requirements greater in this class than your regular English class—preparation, assignments, homework, etc.?
3. Compare the content of this class to your regular English class.
4. Has there been any application of skills learned in this class to help you in other classes?
5. Has this project helped you to concentrate more?
6. Do you feel that your reading level increased as a direct result of this class?
7. Is comprehension necessary to pass tests and other class exercises offered as a part of this project?
8. Would you take this class as an elective if it were not a regular tenth grade English class?
9. Would you recommend the kinds of activities and innovations used in this class in regular English classes?
10. How did you feel about yourself as being evaluated from a "research point of view?"

Comments by the project participants:

1. "This class requires more reading and understanding than our other class."
2. "This class makes you work harder, you don't ever have time to finish an assignment."
3. "We have done things in this class that we don't do in our other class, this one is more interesting. The reading passages are fun to do."
4. "Most of our other classes do not require the

comprehension and reading that this one does."

5. "Concentration is absolutely necessary in this class. If you don't concentrate you will not be able to answer the questions, and when you have to go back to the passage you will lose time and will not finish in the alloted time."

6. "I believe I'll do better on the CAT as a result of this class."

7. "If you don't understand what you have read, you have not really read anything."

8. "I don't know if I would take this class as a elective since it makes you work hard, but I believe I would."

9. "I think if other classes contained the activities and learning skills as this one, they would be a lot more interesting."

10. "I felt under a lot of pressure to perform. When Ms. Thomas told us this was a special project we felt different. We wanted to do good and make a good impression. We didn't realize the work and all the other things were involved. It was the best experience I have had this year."

The idea of English classes being longer was not a direct question, but the suggestion was raised. Some students said that the class left no time for any external forces—play, normal class clowns had no performance time, you were always pushed for time, and the class was not "fun" any more.

Most of the students had given serious thought to their career objectives and the following careers were mentioned:

1. General Clerical (Secretary)	3
2. Nursing	2
3. Armed Forces	3
4. Business (Accountant)	1
5. Child Care Worker (Day Care)	1
6. Sales (Business manager of large corporation	1
7. Entertainment (Professional dancer)	1
8. Education (English Teacher)	1
9. Vocational (Carpenter)	1
10. Brick Masonry	1
11. Auto Mechanic	4
12. Undecided	3

One student commented that Junior ROTC had helped her in making career decisions. There were many careers that interested her. Her ROTC instructor had helped her a great deal in narrowing down her interests.

The students felt that more extensive guidance services should be provided in helping them with decisions such as these. They said that they would take better advantage of the services which are being provided. Many students felt that there were personal needs more important than academic ones. This perhaps would be a concern of any disadvantaged student. More individualized teaching and counseling is needed and deserved on the part of each student. It was a consensus that with a dedicated teacher and the desire to learn, learning can and does take place.

The school administrators surveyed both the experimental and control groups to assess the students' feelings about and reactions to their classes. This student appraisal consisted of 12 questions on which the students were to answer "very much," "some," "very little," "none," or "not applicable." The larger percentage answering questions with "very much" and "some," the more positive was the appraisal. A review of the findings indicates that the larger percentage of students in the experimental group answered the questions more positively than those in the control group. For example, the question, "Did you learn new techniques of mastering reading skills?" was answered by 75% (N=15) of the experimental group saying "very much" and 25% (N=5) "some," compared to 35% (N=7) of the control group saying "very much" and 35% (N=7) "some." Over 85% (N=17) of the experimental group indicated that their reading habits changed "some" to "very much" since participating in this project. Ninety percent (N=18) of the experimental group as compared to 55% (N=11) of the control group indicated that they read materials they had not experienced reading earlier. While 65% (N=13) of the experimental group stated that they engaged in small group and individual sharing activities, 55% (N=11) of the control group indicated the same. Eighty-five percent (N=17) of the experimental group felt that the project will help them improve their scores on standardized achievement tests as compared to 40% (N=8) of the control group who felt the same. Clearly, the students in the experimental control group found the instruction to be more helpful and more positive than those in the control group.

After approximately nine weeks of extensive reading instructions, the teacher was able to determine that the student performance had benefited from the reading skills administered. The teacher found that the students in the experimental group (a) began to recognize pertinent factors necessary for improving reading skills (finding the main idea, spotting details, assessing an author's style and purpose), (b) performed better on standardized tests as a whole, (c) improved their writing skills, (d) began to draw and analyze inferences, (e) began to write more creatively, (f) were able to follow directions with hardly any assistance, and (g) increased their ability to determine definitions of vocabulary words through the use of context clues.

On the other hand, the teacher found less involvement with reading awareness and

understanding in the control group. The pupils in this group remained dependent upon the teacher's explanation. Also, their sentence structure and paragraph organization needed more attention.

The post-assessment findings supported those of the instructor. Because of direct instruction in reading comprehension and test-taking skills, the experimental group's performance accelerated, whereas the control group made no significant gain.

Implications of Study

The implications drawn from this study indicate that:

1. Specific and intensive instruction in reading skills in content area classes makes a difference in reading achievement.

2. Teachers in the content areas need instruction in teaching reading skills pertinent to their particular discipline, and

3. Specific and intensive instruction in reading skills in content area classes makes a difference in academic achievement.

Recommendations

As a result of this study, and in light of the implications and findings ascertained, these are the following recommendations:

1. That a similar study be designed with increased group sizes;

2. That a similar study be designed for a longer period of time;

3. That a similar study be designed for various disciplines;

4. That a study be designed not only to evaluate the pre- and post-assessment scores of the reading test, but also to correlate these scores with those made on the California Achievement Test and with grade point averages;

5. That a similar study be designed with greater participation by the guidance counselor;

6. That teachers and administrators acquaint themselves with recent research and developments in the teaching of reading;

7. That a reading teacher or reading specialist be provided for the secondary school as well as the elementary school;

8. That in lieu of a reading teacher, a consultant be obtained to assist teachers in developing reading improvement in the content areas;

9. That the implementation of a reading improvement program be formulated by the English teacher in cooperation with the school support personnel cited in this study; and

10. That teachers and administrators read and discuss the reactions of students to this project in order to determine the importance of a program for reading improvement in the secondary school.

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Assessing Curriculum Development in Perry County Alabama: The CIPP Model as a Suggested Evaluation Framework

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Since the advent of standardized testing, test performance has been an issue of concern for blacks and other minorities. Collectively speaking, black students tend to score less on standardized tests than their white counterparts. This trend has generated several interpretations and responses which may or may not be in the best interest of the students. One response, adopted by the Alabama Department of Education, was the development of a vigorous competency program for all grades including a prerequisite exam for high school graduation. In response, school systems throughout the state began focusing upon basic competencies with greater emphasis. Among this group is the Perry County School System, Marion, Alabama. Although Perry County ranks as one of the nation's poorest counties, the county school system has formulated a highly promising approach to curriculum development without massive infusions of state and federal funds. The approach relies heavily upon internal resources and expertise within the local community and includes two volumes in each of the three subject areas: reading, math, and language arts. These volumes were developed by local teachers with input from outside consultants. Volume One (*Standard Competencies and Performance Manual*) is a compendium of general objectives with sample items for mastery; and Volume Two (*Methods and Activities Manual*) is a tabulation of specific objectives, appropriate instructional methods, and student activities.

Although the project has received widespread support of teachers and school system personnel, the County sensed a need for a comprehensive evaluation model. The purpose of this study is to help identify a design methodology appropriately tailored to the needs and internal resources of Perry County. The researchers will suggest a general evaluation framework for Perry County to develop into a specific design for its own purposes of assessment and review.

The last two decades have seen a profusion of evaluation designs and models designed to show the effect of educational performance of American youth. Along with federally funded projects has come the obvious need to evaluate the results of these efforts (in an attempt to show accountability for resources allocated). The resulting wide array of assessment practices has stimulated abundant discussion of the evaluation function (Stake, 1967; Mann, 1965; Sciven, 1967; Alkin, 1969; Roth, 1978; Stufflebeam et al., 1971). One model chosen by the developers as having utility for evaluating the efforts of the Perry County School System is the CIPP (Context, Input, Process, and Product) model as developed by Stufflebeam et al. (1971).

The CIPP model delineates four stages in which timely, objective information can have substantive impact in the life cycle of a program or project. These stages are context, input, process, and product evaluation. During *context evaluation* (stage 1), educational programs like biological organisms must continually monitor their environments (context) in order to determine which unmet needs, unfilled potentialities, or undetected problems affect the "steady state" of the program. Impetus for context evaluation for the Perry County School System located in the Black Belt of Alabama stems from the implications of the state mandate to improve the basic skills and competencies of every district up to national average. In 1981, the County scored 5.9 summated grade equivalents below the national average. The phenomenon of low achievement which was common to most, if not all school systems located in the Black Belt, prompted Perry County to search for a solution strategy.

Once contexts have been identified and a need for improvement justified, *input evaluation* (stage 2) determines which solutions or intervention strategies are most appropriate for addressing the needs which arise from context evaluation. Relative to input evaluation, the superintendent organized a select group of teachers into a *Committee of 21* and charged them to select the most appropriate strategy for addressing the problem of improving pupil performance. Assisted by curriculum specialists and consultants from the State Department of Education and the University of Alabama, the Committee of 21

selected the development of curriculum manuals as the most appropriate strategy for addressing the problem. With input from teachers throughout the school system, two curriculum volumes were developed to include the areas of reading, math, and language arts. Volume One is a listing of general objectives with sample items for mastery and Volume Two is a tabulation of specific objectives, appropriate instructional methods, and student activities.

After a solution strategy has been determined, information derived from *process evaluation* (stage 3) insures that the solution is implemented according to plan so that a fair assessment of the merits of a solution strategy can be determined. The final stage, *product evaluation*, focuses upon determining the impact of the solution and determining the effectiveness of outcomes.

It should be noted that the third stage of the CIPP model, process evaluation, represents the primary thrust of the current study. The researchers developed and field tested instruments to be used for determining if the solution was implemented according to plan. Also, preliminary data were examined to assess the impact of the solution, to judge its worth, and its effectiveness.

Thus, the Perry County Evaluation Design is based upon the major components of the CIPP model tailored to the unique requirements of the population served. An evaluation design composes a structured evaluation plan along with concomitant instruments, evaluation protocols, and schedules. The broad outlines of an evaluation design containing a suggested framework for Perry County is found in Table 1. Although the design is targeted for use in Perry County, the concept may be applied and adapted to a large number of intended settings.

Table 1
Suggested Evaluation Design Framework

Evaluation Stage	Focus of Evaluation (What?)	Locus of Information (Where, How?)	Persons (Who?)	Timing (When?)
Context (access needs)	Learner performance	Standardized test results School retention rates Classroom access, etc.		
	Teacher performance	Needs assessment surveys District staff recomm. Inservice proceedings Building evaluations, etc.		
	Constituent Attitudes	Needs assessment surveys PTA actions Church & civic meeting School board actions, etc.		
	External Sources	State Department of Education Education mandates Support Group Collaborations (ACHE) Federal Legislation, etc.		
Input (access strategies)	Review of: Possible Curriculum Materials for —readability —appropriateness —packaging —field testing —ease in implementing —recordkeeping —pacing —etc.	District Staff Faculty Committees Software reviews Consultants Surveys of users in other systems Pilot tryouts		
	Other intervention strategies (staffing, organization, etc.)	Variable		

(table continues)

Evaluation Stage	Focus of Evaluation (What?)	Locus of Information (Where, How?)	Persons (Who?)	Timing (When?)
Process (access implementation)	Teacher behavior	Time-on-task studies Observation analysis Student surveys of teacher practices Inspection of materials used Supervisory ratings in classroom visits		
	Teacher inservice training	Participant observation		
	Teacher attitudes	Interviews Anonymous questionnaires Group feedback discussion		
Product (access impact)	Standardized tests	California Achievement Test Alabama competency tests ACT and SAT		
	Criterion tests	Perry County tests of achievement based upon MAM and SCMP		
	Survival skills	School attendance rates Employment records-rates		
	Behavioral and attitudinal	Discipline referrals Student opinionniare results Community involvement		

Method

Subjects

Teacher implementation is a major focus of the process evaluation stage within the CIPP model. Given the focus, 15 teachers were randomly selected to participate in the pilot testing of three process evaluation instruments. Total years taught for the sample ranged from four to 35 years with 17.9 years being the average time taught. Eighty percent of the teachers sampled indicated that they have attended the introductory workshop for SCPM (*Standard Competencies and Performance*) and MAM (*Methods and Activities Manual*) while 40% had been involved with the development of the manuals. Approximately 33% of the sample were male and the remaining 67% were female. Relative to highest academic degree, 46.7% reported that they had earned a bachelor's degree, 46.7% had received a master's degree, and one person indicated receipt of the doctorate.

Instruments

Three instruments were pilot-tested on the teachers to assess five critical process (implementation) variables: (a) degree of implementation, (b) teacher clarity, (c) access of resources and materials, (d) impediments to implementation, and (e) teacher receptivity. At least two instruments were used to assess each objective. It should be noted that the instruments, i.e., an observational schedule, an interview schedule, and a questionnaire were derived from a model that Brantley (1974) developed while studying the implementation of a competency-based mathematics approach in 15 rural schools in northwest Ohio.

Procedure

With the aid of the Alabama Center of Higher Education, permission was obtained from the superintendent of Perry County Schools to conduct the pilot study. Prior to data collection, the researchers met with the superintendent and his staff to discuss the study and to agree on a strategy for collecting the data. It was decided that the researchers would interview 15 randomly selected teachers and observe their classroom activities across a two-day period. At the conclusion of each interview/observation, teachers were given a questionnaire to complete and enclose within a sealable 8-½ x 11 envelope for collection.

Since the study's purpose was not the testing of hypotheses, measures of central tendency and frequency distributions constituted the modes of analysis for quantifiable data. Subjective responses, as elicited through interviews, were summarized by the researchers.

Results

The purpose of the research was to determine the appropriateness and fitness of using selected assessment instruments as a part of an evaluation design. The process evaluation component of the design was to assess five critical process evaluation variables: (a) implementation, (b) clarity, (c) use of necessary resources and materials, (d) impediments to implementation, and (e) receptivity. Implementation was assessed with the observational and interview schedules while clarity, resources, ease, and receptivity were addressed by the interview schedule and the questionnaire. Objectives covered by the questionnaire will be presented first.

Table 2
Teacher Clarity
Percentage of Responses to Questionnaire Items

Questionnaire Items	Percent
1. Where to go for help in case of questions or problems	80
2. Recordkeeping and reporting students' achievement levels	80
3. How to utilize a variety of teacher aids to achieve objectives	80
4. What the basic goals and objectives are; what the program is trying to accomplish	73
5. How to prepare and arrange instruction for each child	73
6. How to incorporate textbooks and other resources	73
7. How to describe and assess students' achievement levles	73
8. How and where to secure classroom teaching materials and resources	67
9. How to place an entering student at the proper level	67

Table 2 shows the percentage of responses to nine clarity items on the questionnaire. Although a clear understanding was indicated by a majority of the respondents, the data suggest that the least understanding was associated with placing an entering student at the proper level and how and where to secure classroom teaching materials and resources.

The third objective related to use of necessary resources and materials. Items here included a rating of the adequacy of materials, supplies, and resources to implement SCPM and MAM. The most positive received an adequate rating by 80 and 73%, respectively, of those responding. The remaining received an adequate rating by a smaller percentage of the respondents. Thirty-three percent rated basic supplies as adequate, 27% rated as adequate materials which allow students to work independently without overreliance on the teacher, 20% rated materials for recordkeeping as adequate, and only 7% stated that recommended resource materials were appropriate to students' interests, abilities, and reading levels. Thus appropriateness of recommended resource materials to students' interests, etc., and materials for recordkeeping, i.e., progress charts, represent the least adequate areas relative to use of necessary resources and materials.

To assess ease of working out impediments to implementation, teachers were given 12 items and asked to indicate their difficulty with them. Table 3 presents the results of this approach. Looking at the table, we note that maintaining discipline was an item that most teachers reported having little or no difficulty with while the range of ability levels within the classroom and finding adequate time to plan and implement activities in the MAM were items that only a small percentage of the respondents reported having little or no difficulty with.

The final objective covered by the questionnaire was receptivity to the curriculum project. Approximately 90% of the respondents generally agreed that (a) the basic philosophy underlying the Perry County Curriculum Project was sound, (b) the decision to adopt the project approach was wise, (c) the project is well suited for instruction in their classroom, and (d) so far, the project seems to be successful. Eighty-seven percent generally agreed that the project adequately deals with what they consider to be crucial classroom needs and introduction of the project has helped their day-to-day instruction become more effective and efficient.

Table 3
Implementation Impediments
Percentage Reporting Little or No Difficulty with Selected Tasks

Selected Items	Percent
1. Maintaining discipline during periods of instruction	80
2. Keeping accurate records of students' achievements	60
3. Evaluating student's progress toward competencies; finding resource materials as recommended to MAM; and receiving adequate back-up support and assistance	53
4. Sufficient planning for day-to-day instruction; fostering student involvement in recommended activities; and placing student involvement in recommended activities	47
5. Securing access to the Resource Center	40
6. Giving each student individual attention; individualizing instruction	33
7. Finding adequate time to plan and implement activities in MAM	27
8. The range of ability levels in my classroom	13

Thus, there appears to be very good support for implementation of the MAM and SCPM with teachers' receptivity being quite positive.

Findings with the observational and interview schedules were consistent with responses reported on the questionnaire. After a careful review of these findings, the researchers agreed upon the following summary observations:

1. Receptivity—A general widespread receptiveness of the project was observed with teachers stating that it was a good idea that was needed and not something forced upon them. In every school that was visited, teachers were able to cite persons from their school who had participated in the development of the project in a direct way.

2. Clarity—Teachers seemed generally clear as to the purposes of the project and the methods by which the project was to be implemented.

3. Ease in working out impediments—As problems would arise, teachers indicated a variety of resources and persons they would call upon to get assistance including central office supervisors, their building principal, and especially, other "master" teachers within the school that they respect.

4. Implementation/materials—Although the teachers were generally positive to the overall concept and approach, some difficulty was noted relative to certain areas.

The researchers attempted to assess the fifth process evaluation variable, degree of implementation, with an observation schedule and an interview. The researchers personally visited 15 teachers in each of the seven schools within their classrooms in order to watch the teachers at work in the implementation process. Not only was congruence found between the observational schedule, the interview, and questionnaire, direct observation allowed the researchers to identify additional classroom dynamics, impinging upon the implementation process.

The researcher noted, for example, that teachers were frequently uncertain how to best integrate their basic skills instruction with regular outgoing instruction. Teachers implemented the curriculum project in a variety of ways from intermittent use to predominate use.

Also, the researchers noticed through direct observation, that although the curriculum model called for a mastery approach, neither the instructional materials nor recordkeeping materials seemed appropriate for individulized mastery learning. Several teachers expressed disappointment with the inability to locate materials or even basic supplies appropriate to students' interests and ability levels. Inadequate time for planning and materials/knowledge for recordkeeping were also listed as areas of concern. Finally, teachers expressed difficulty in placing students at their proper level and effectively addressing the needs of students with varied ability levels.

Nevertheless, the researchers observed a general receptivity and commitment for the part of teachers to seeing the district project succeed in their classrooms. The teachers expressed general receptivity to the approach and seemed willing to implement it to the extent of their abilities. The product evaluation component was measured by the state mandated California Achievement Test which was administered to all students in the third, sixth, and ninth grades. Earlier, it was stated that Perry County was 5.9 summated grade equivalents below the national norm during 1981. Since the current curriculum project was implemented in 1983, the difference has decreased to 1.8—30.7 for Perry County versus 32.5 summated grade equivalents for the national norm. Included in this gain is an increase

of 2.3 from 1983 to 1984. While gains were reported for previous years, it is noteworthy that the largest gain is associated in time to the implementation of the current curriculum model.

The primary purpose of the current study was to develop an evaluation framework appropriate for Perry County School Systems that would include the four stages of the CIPP model, i.e., context, input, process, and product evaluation. After delineating the first two stages of the model, the researchers developed and field-tested three instruments to be used for collecting data relevant to stage 3. No instruments were developed for stage 4 of the model, product evaluation, but procedures for assessing impact were suggested and preliminary data reviewed.

A major premise of this effort is that the use of multiple instruments (observation, interview, questionnaire) to capture data gives a more complete description of the process than over-reliance on any one means of input. Taken together, these three sources of data provide complimentary information which more effectively savors the complexity of the curriculum development effort. Each instrument addresses certain project design objects and helps to cross-validate the corresponding instruments (see Table 3).

On objectives related to teacher clarity of understanding, high agreement was observed between questionnaire and observer interviews. Lack of clarity on placement of students at proper levels was corroborated by observation.

On objectives related to the use of necessary resources and materials required to implement, high agreement was observed between questionnaire and researcher interviews. Basic documents MAM and SCMP rated highly while resources needed to implement rated lower.

On objectives related to ease of working out impediments to implementation, high agreement was evident with the exception of item 4 which dealt with keeping accurate records. Although researchers observed almost no satisfactory recordkeeping based on the MAM and SCP model, 60% of teacher reported "little or no difficulty." This discrepancy highlights the importance of supplementary questionnaire data with direct observations.

The teachers' perception of what entails accurate records was hypothesized by the researchers to be limited to the roll book concept rather than the continuous progress model. One elementary school proposed presenting an inservice to district teachers on recordkeeping. When questioned, teachers were unaware of any suggested, workable ways to keep records. This phenomenon suggests the need for inservice training as a means of educating teachers to methods of tracking individual students' progress.

On objectives related to receptivity, the researcher noted high agreement between questionnaire and interview data.

A qualitative cross-comparison of observations indicates the questionnaire yielded consistent, reasonably valid data which could serve as a rough but useful barometer of teacher attitudes.

Following the interviews, teachers were asked to qualitatively assess the appropriateness of the interview content itself. Teachers responded with unanimity that the questions raised by the interview were in fact relevant and timely.

In summary, the pilot investigation made possible by this study supports the appropriateness of using the CIPP model as a base for an evaluation design framework. The model evaluation provides a holistic, thematic view of evaluation as an all encompassing activity as opposed to the sketchy responses from a questionniare. The model highlights the critical decision points of a project when information is most needed, and depicts the type of information made available by evaluation needed for enlightening decision-making.

Classical evaluation models are not usually implemented in classrooms and schools with the controls in place that characterize laboratory experimental design. This suggested design also allows for flexibility and leeway. In the Perry County project, context evaluation occurred informally through the district's perceived need to pursue a bold course of action, related to improvement of students' test scores in response to state mandates and constituent desires. Input evaluation became evident also through the installation of teacher committees who laboriously identified suitable objectives for focus (SCMP), along with illustrative activities targeted to the objectives (MAM). Consultants and specialists reviewed the curriculum approaches. Process evaluation was the weak link of the Perry County project and the component receiving the focus of this study. The researchers suggested a more structured framework for an evaluation design based upon the CIPP model along with three concomitant process evaluation instruments.

Although focus has been given in the study to the process evaluation component, the design needs to focus on refinement of the other stages, including product evaluation in order to secure the most objective, timely, accurate information that can be used in making important educational decisions in the Perry County School District.

The researchers feel that commendations are due Perry County and the other Black Belt counties for the substantive test score improvement registered, even as the researchers recommend continued attempts on the part of such counties to secure valid information to guide them in their

collective quests for excellence in educational achievement.

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